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# BLUE JAY

September 1986

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COVER: *Moose. Blake Maybank.*

# BLUE JAY

Vol. 44 No. 3 September 1986 143-206

# H. S. "CORKY" JONES: A BIOGRAPHICAL NOTE

TIM T. TOKARYK, Earth Sciences Program, Saskatchewan Museum of Natural History, Wascana Park, Regina. S4P 3V7

*Corky Jones (right) and Albert E. Swanston (SMNH) taken in the summer of 1950 about 15 mi. n.w. of Eastend, in the early Oligocene deposits*

*"He is nobody important - an old-timer who lives in a little three-room house near the center of town and probably never made two hundred dollars a month in his life, ... he has never scorned learning, he has always been willing to try importing it".*

Anyone, young or old, who has tried to become a scientist, knows the obstacles. Today libraries, museums and universities are the teachers, each in its own way. Yesterday, some 80 years ago, it was quite different, especially in a small prairie town.

When Harold S. Jones, known to most as "Corky," came to Eastend in 1898 there was not much there. In fact he witnessed the beginnings of the town, the arrival of the railway, the dissolution of the Eastend North West Mounted Police. He witnessed many things, local and international, both good and bad.

The purpose of this article is to pay tribute and to attempt to do justice to the community of Eastend and the memory of Corky Jones by making a brief sketch of his palaeontological contributions. I will say at this point that I never met the man.

All I have to go by is a few articles, correspondence between himself and Dr. Charles M. Sternberg, photographs and most importantly, the impressions I am left with when visiting Eastend, its people and the museum.

His curiosity for fossil collecting began before he came to Canada. While still a child, his father would take Corky to the fossil beds found on the Isle of Wight, on the southern coast of England.

Corky had no formal education in the field of palaeontology. He was self-taught. He relied on the scientific literature that he was able to scrounge. In the small town of Eastend, in the early part of the century, far from any academic outposts, learning more about fossils was almost impossible. A number of years after he arrived in Canada, he met a man with similar interests in fossils. He was Charles M. Sternberg, son of the famed fossil hunter, Charles H. Sternberg.

In the early 1920s Sternberg, then at the Geological Survey of Canada, caught up with Corky. In a letter commemorating Corky's work and dedication in Eastend supported by the Eastend Educational Association, Sternberg wrote, "while going through Eastend in 1921 I saw a horncore of *Triceratops* in Mr. Lackey's office. I inquired and learned that it had been collected by Corky Jones. I immediately got in touch with Mr. Jones, ... this was a most important discovery because it proved the presence of beds of Lance age in an area where they were not previously known."[1] This was Corky's first major discovery.

Since that meeting, correspondence between the two flourished. Most of Corky's concerns involved help with identification. Sternberg to Jones, 17 August 1931:

> "I am returning today, under separate cover, the bone which you sent me for identification, ...It is an ungual phalanx or claw bone of a large carnivorous dinosaur, *Tyrannosaurus rex*."[5]

Fossils were not the only things discussed in their letters. Jones to Sternberg, 16 June 1932:

> "It is a changed country since my last letter, there is more grass and the country looks greener than it has done for years. Several things in the garden that we had thought dead are coming to life. It is almost as if some wizard had waved its wand over the land."[3]

Corky was aware of the fact that the majority of his letters to Sternberg were requests:

> "I am beginning to think that you will think I am a regular "Calamity Jane" from my letters but still when one is living in the midst of it [fossil bearing rocks] there doesn't seem anything else to write about."[3]

In the 1930s Corky met another palaeontologist, Dr. Loris S. Russell, then with the National Museum of Canada. Dr. Russell gave a little more personal insight in his letter commemorating Corky. "I recall when he was town constable and had installed a wooden post in the main intersection to dissuade vehicles from cutting corners. This became known as Corky's police force, and when on Sunday morning it was found leaning at an inebriate angle, this dereliction of duty would be gravely reported to the "Chief."[1]

Corky's second major find was that of a partial *Triceratops* skull in 1936. Jones to Sternberg, 10 September 1936:

> "Last summer a party of us consisting of [Charlie] Holmes, George Beane and myself located a bone, ...all that showed was a ball-joint. We at the time thought a large femur but when we went down this summer to get it, we were surprised to find nearly a whole *Triceratops* skull stuck to the end of it."[3]

Corky had previous experience in finding fossils, mostly from surface collecting, so when it came to preparing and mounting larger specimens, it was a new challenge. Sternberg helped out immensely and in a two page letter to Corky, he explained the basic preparation and mounting techniques.

In his search for fossils around Eastend, Corky came to know the country very well. When Mr. and Mrs. Fenley Hunter of Flushing, New York wanted to look for fossils in western Canada, they contacted Dr. Russell who referred them to Corky. They were then informed by Corky that the Calf Creek area was very fossiliferous. The Hunters soon found an early Oligocene bone bed which has yielded since its discovery thousands of fossils; the most abundant is the large mammal called a brontothere.[6]

By the late 1930s Corky began to emerge as a fine palaeontologist, not only as a collector/preparator, but also in the identification of fossils. His growth as a palaeontologist was enhanced greatly by his association with Sternberg. He now had the ability to identify vertebrates from the Late Cretaceous ("Age of Dinosaurs") and the Early Oligocene (in the middle of the "Age of Mammals").

In the early 1940s however, things seemed to slow down for both Corky and Sternberg. Corky with his health and Sternberg with the war. Jones to Sternberg, 11 October 1944:

> "I have done little fossil hunting the past few years, having no car of my own and the gas and tire shortage, I have no opportunity. I have also been told by the doctor to go easy. It looks as if the European part of this awful war is going to drag on for a few more months, several young lads from this dist [district] have been killed and [on the] missing list but I suppose this to all districts."[3]

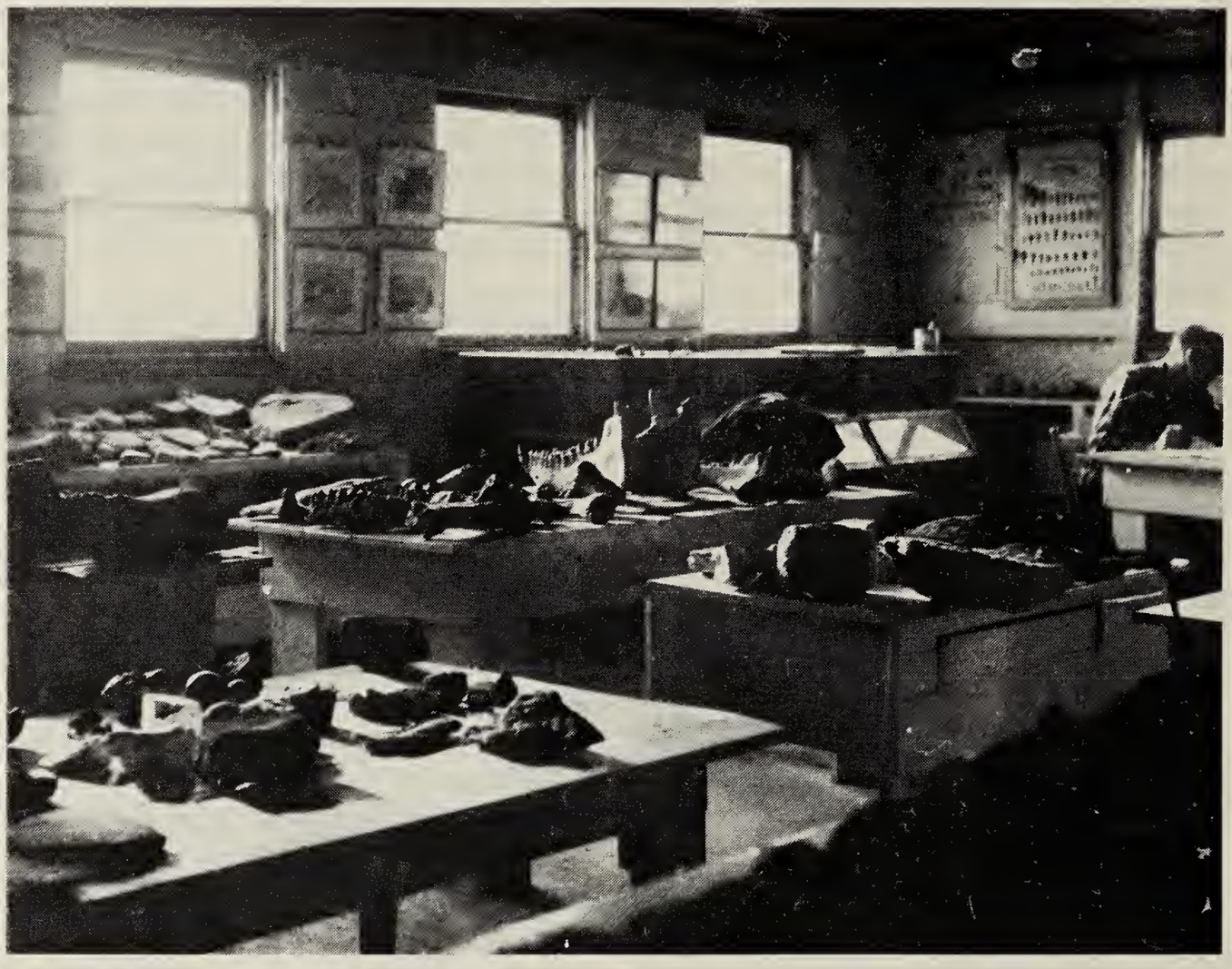
Sternberg to Jones, 17 October 1944:

> "I have been on war work for most the time since April, 1940, but I still keep in touch with palaeontology, ...I have two boys in the Navy but they are both in Canada."[8]

Soon after the war, Corky was collecting fossils. A friend of Charles Holmes from British Columbia called Corky to see if he could obtain a fossil since he too was an avid fossil collector. Both Holmes and Corky agreed that they could collect a turtle (*Basilemys*) that they had previously found but not yet collected. This gift never transpired because once the specimen was recovered and prepared, it was too well preserved to give away. Holmes's friend from B.C. went back empty handed.

In 1947, a specimen discovered in the Frenchman River Valley would later become one of the best specimens ever collected by Corky. This was the shield or crest belonging to a horned dinosaur known collectively as ceratopsians. Most ceratopsians collected from the Eastend and Frenchman River Valley areas belong to the genus *Triceratops*. However, the crest collected in 1947 by Corky did not fit the *Triceratops* description. In discussing the specimen with Sternberg (Jones to Sternberg, 6 August 1947) Corky remarked, "It is definitely not 'Triceratops' and I have no picture of anything quite like it."[3]

Letters to Corky from Sternberg suggested a number of possibilities ranging from *Anchiceratops, Arrhinoceratops* or *Pentaceratops* (letters 23 August 1947, 3 November 1947 and 20 February 1948).[5] Though these suggestions came before and after receiving photographs and measurements, Corky was still not quite convinced. It was not until 1981, three years after Corky's death, that a palaeontologist noted the crest in the *Canadian Journal of Earth Sciences* and this was only in passing.[8] Almost 40 years after its



*The museum in the old school basement, 1962. Bruce McCorquodale (SMNH)*

discovery, a full description identified the specimen as belonging to a rare ceratopsian called *Torosaurus*, the only one known in Canada.[7]

Although he collected many fossils before and after *Torosaurus*, this and the *Triceratops* skull are the most visual to the visitors of the Eastend Museum where Corky's fossils are now on display. He was also responsible for collecting a fossil leaf impression, now called *Cinnamomum jonesi*.

These accomplishments may seem of interest only in passing to some academics but two facts should be stressed. First, he did not have any higher educational schooling; secondly, he was never paid for his services of finding, collecting, preparing, mounting, identifying and displaying the fossils and artifacts that he collected. It has been said of Corky that, "having bones around, he could not be content until he got books and learned what they might be. What ever the defects of his education, he knew the indispensible first step - how to go about learning."[4]

It must have been devastating to Corky in 1952, when a flood engulfed the basement of the old school where his fossil collection was first housed. This flood destroyed a number of specimens including the associated fossils collected with the *Torosaurus* crest. But friends, both local (like Jean Dordu) and professional (staff from the National Museum of Canada and the Saskatchewan Museum of Natural History) helped restore the collection. It was later moved into the new school and has since moved again into the Pastime Theatre.

Since then, Corky's notes and records have been lost and some of the fossils have begun to show their extreme age. On 28 March 1978, the town of Eastend lost part of its history. Harold Saunders Jones died. What is left are the fossils and artifacts he collected, long ago.

"It is question whether or not the museum means anything outside of an easily satisfied and idle curiosity, ...it offers them [the school children] more information on the history of their own place than anything else, ...and even if no Whitemud[*] child takes fire from Corky's collection and becomes an anthropologist or paleontologist, something may still have been accomplished by his example. Any child who knows Corky can see knowledge being loved for its own sake."[4]

I thank Richard Day (NMC, Paleobiology Division) who unselfishly searched for and supplied me with letters between Jones and Sternberg. Comments on the preparation of this manuscript were generously given by John E. Storer (SMNH) and Julie Cormack (University of Alberta, Edmonton). I am still interested in receiving copies of letters, notes and photographs of Corky and his work. If these are available, they could be sent to the Eastend Museum or to the Saskatchewan Museum of Natural History, to T. Tokaryk.

[1] EASTEND EDUCATIONAL ASSOCIATION. 1964. In Recognition of H. S. "Corky" Jones. Unpublished letters commemorating the work and dedication of Corky.

[2] EASTEND HISTORY SOCIETY. 1984. Turner-Warwick Printers, N.B. 895 pp. Range riders and sodbusters.

[3] JONES, H.S. [Letters TO C.M. Sternberg]. Located at: The National Museums of Canada, Ottawa, Saskatchewan Museum of Natural History, Regina, and the Eastend Museum, Eastend.

[4] STEGNER, W. 1977. Wolf Willow. First Laurentian edition. 306 pp.

[5] STERNBERG, C.M. [Letters to H.S. Jones]. Located at: The National Museums of Canada, Ottawa, Saskatchewan Museum of Natural History, Regina, and the Eastend Museum, Eastend.

[6] TOKARYK, T. 1985. A Historical Review of the Brontotheriidae Collected in Saskatchewan. Blue Jay 43(3):151-154.

[7] TOKARYK, T. In press. Ceratopsian Dinosaurs from the Frenchman Formation (Upper Cretaceous) of Saskatchewan. The Can. Field-Nat.

[8] TYSON, H. 1981. The Structure and Relationships of the Horned Dinosaur *Arrhinoceratops* Parks (Ornithischia:Ceratopsidae). Can. J. of Earth Sci. 18(8):1241-1247.

[*] The original name for the town of Eastend, and the river which flows through it, the Frenchman.

# COLLECTION OF FOSSIL VERTEBRATES FOR THE SASKATCHEWAN MUSEUM OF NATURAL HISTORY, 1985

TIM T. TOKARYK, Saskatchewan Museum of Natural History, Wascana Park, Regina, Saskatchewan. S4P 3V7

The collecting objective for the Earth Sciences Program at the Saskatchewan Museum of Natural History (SMNH), Regina, for 1985 (Permit 85-IP) was to examine the marine and terrestrial Late Cretaceous sediments of Saskatchewan for vertebrate fossils. Three distinct areas were prospected, each yielding many fossils.

The first area that was examined was the Frenchman Valley near Shaunavon. Exposures in this part of the valley are dinosaur-bearing and occur in the Frenchman Formation, whose age is about 65 million years before the present (MYP). Previous work in this formation dates back to the early part of this century and has preserved many fossils of plants, invertebrates and vertebrates. In the summer of 1984 (Permit 84-IP), John E. Storer, Curator of Earth Sciences at SMNH, located a small microsite (an area with a large concentration of small bones) and discovered a number of small mammal teeth (SMNH Loc. 72F08-0012). It was not until last summer that we were able to collect this site, which we have called the "Gryde Locality" after Greg Gryde whose land the site is on.

The collecting of a microsite is quite different from the recovering of the larger vertebrates. Since the fossils are very small, some the size of pin-heads, we have to shovel as much rock as possible into burlap sacks and carry it to a stream so we can break down the sediments without using too much force. The sediment is placed into wooden boxes with screen bottoms and then placed in a stream for soaking. A classic account of this process, which is commonly called "washing" or "screening," was written by M.C. McKenna.[1] At the Gryde Locality we removed approximately 2.5 tons of matrix.

When the site was first discovered it was realised that it would be very rich in the rare mammals of the Frenchman Formation, but after sorting the residue of the matrix for fossils (most of which was done under a microscope) in the lab, it was found to be far better than it had been hoped. At least 500 mammal teeth, a larger number of lizard and amphibian bones, and some small dinosaur teeth were recovered.

Five new fossiliferous sites were also located in the Frenchman Valley, giving additional information about the area.

Near Unity, Saskatchewan, exposures are known by many of the local residents. For several years Robert Eltom, a Unity high school teacher, has found fossil bones. He later contacted the University of Saskatchewan and Theresa Skwara went to look at the area. It was not until winter that Skwara contacted SMNH for further examination of the area. The exposures are very similar to those in Dinosaur Provincial Park, Alberta (Oldman Formation), approximately 75 MYP (see Fig. 1). The area we were shown looked like a bone bed. This is an area where many bones of animals, sometimes of the same species, have accumulated. During the summer the author spent a week excavating as much of this bone bed

as possible. The results of this will not be known until preparation of the fossils is completed.

In early September, Storer and the author returned to the area to prospect the remaining exposures. Thirteen fossiliferous sites were located. A preliminary faunal list follows:

**Chondrichthyes**
*Myledaphus* sp.: teeth

**Osteichthyes**
Vertebra

**Amphibia**
Vertebrae

**Reptilia**
*Champsosaurus* sp.: Limb bone, distal end, caudal vertebra

Crocodilidae, indet.: Scute

*Aspideretes* sp.: Shell fragments

*Basilemys* sp.: Shell fragment

Hadrosauridae, indet.: Cervical vertebra, phalanx of left manus

Ceratopsidae, indet.: tooth

Ornithomimidae, indet.: Caudal vertebra?

Tyrannosauridae, indet.: Caudal vertebra, teeth

*Saurornitholestes* sp.

*Dromaeosaurus* sp.: tooth

*Dromaeosaurus* sp.: tooth

Also recovered from the Unity area were sediments for use in studying fossil pollen. A large variety of palynomorphs were identified by Art Sweet of the Geological Survey of Canada, in Calgary (listed in Report AS-8-1985) and are comparable to those of the Oldman Formation

of Alberta. Future work in this area should yield even more fossils and will enhance this faunal list.

In August 1984 Robert and Joe Frost of Swift Current reported a partial plesiosaur (a large marine reptile that lived in the seas at the time of the dinosaurs) near the shore of Lake Diefenbaker (Loc. 72J13-0013). Four cervical vertebrae were collected, with further excavation planned for 1985. In mid-June Storer and the author, with the assistance of Dave Baron and Brenda Dew from SMNH and Darren Tanke, then of the Tyrrel Museum of Paleontology (Drumheller, Alberta) excavated the remainder of the vertebrae. No skull was located but a total of 13 cervical vertebrae with a total length of approximately 7 ft. and one cervical rib were recovered. Preliminary observation of the specimen in the field suggests that it belongs to the plesiosaur family Elasmosauridae, in which the neck vertebrae can reach 70 in number. The specimen occurs in the Bearpaw Formation, approximately 72 MYP.

Our program plans to further prospect the Frenchman Valley and the Unity area for additional localities, and to extract as much information as possible from ones that are already known. These areas have yielded many fossils and have added to our knowledge of animals of the Age of Dinosaurs. However, in surveying the Frenchman and Unity areas, we have only scratched the surface of fossil collecting, as each year the elements expose new fossils that have never been seen before.

**Acknowledgements**

I would like to thank P.J. Currie of the Tyrrell Museum of Paleontology, Drumheller, Alberta for identifying the small theropod material from the Unity localities, and A. Sweet of the Geological Survey of Canada, Calgary, for the preliminary study of the palynomorphs, also from the Unity localities. J. Storer has supplied helpful comments on this manuscript.

[1] MCKENNA, M.C. 1962. Collecting small fossils by washing and screening. *Curator* 5(3):221)235.

*Rabbitbrush* *Blake Maybank*

# AN UNUSUAL MUSHROOM OF REGINA AND TRISTAN DA CUNHA

FRANK BRAZIER, 2657 Cameron Street, Regina, Saskatchewan.

Tristan da Cunha is a group of three small islands in the south Atlantic Ocean, belonging to Great Britain, and situated in latitude 37°06'S., and longitude 12°01'W, about equidistant from South Africa and South America. The islands are named Tristan, Nightingale and Inaccessible, and are peaks of submerged mountains of the Mid-Atlantic Ridge. On my desk globe the islands are, roughly, 6,700 miles from Regina, as the American Crow flies but none of our Crows make such a lengthy journey in one trip. Remote as Tristan da Cunha is from my doorstep there is, to my mind, a connection albeit a tenuous one.

On 21 June 1984 I noticed some strange mushrooms growing among the Lilies of the Valley under my front window. Although I have a slight acquaintance with the world of fungi I knew I had never seen these before.

However, Robert Kreba, of the Saskatchewan Museum of Natural History, has studied mushrooms for years, and a telephone call brought him over on his way home. He did not recognise the mushrooms so he gathered two mature specimens and a couple in the button stage. The Museum collection contained a specimen of the same species which Bob had collected at Ille a la Crosse a few years ago but which he had not seen since. The mushrooms were *Agrocybe praecox*.

A search of some fungi literature disclosed that is of the Order Agricales, Family Bobitiaceae, Genus *Agrocybe*; some years ago it was known as *Pholiata praecox* (Pers.) Fr.

Their common name is Early Agrocybe, and they are described as edible. They usually appear following good rains in May and June. Regina had been blessed with heavy rains after a dry spring and practically snowless winter previous to my discovery.

Bob Kreba has been a mycophilatelist (he collects postage stamps showing mushrooms) for some time and, as an interesting footnote to the discovery of Early Agrocybe in Regina he showed me a postage stamp from Tristan da Cunha, value 10 pence, issued in 1984, depicting *Agrocybe praecox*, but of the variety *cutifracta*, indicating that the skin cracks when mature as our species does not.

*The Encyclopedia of Mushrooms* by Colin Dickinson and John Lucas (Orbis Publishing, London, 1979 — out of print) gives the common European name of Spring Agaric to this mushroom, and describes its range as: "common in Europe, northeastern North America and South Africa, and cautions that the caps only are to be eaten. So my doorstep mushroom had not only colonized a remote speck in the south Atlantic Ocean but was also pushing at its western limits in Canada. Such is the romance of natural history!


*Tristan da Cunha stamp*

# REVISED CHECKLIST OF SASKATCHEWAN BUTTERFLIES

RONALD R. HOOPER, Saskatchewan Museum of Natural History, Wascana Park, Regina, Saskatchewan. S4P 3V7

With the publishing of *A catalogue/checklist of the butterflies of America north of Mexico* it has become necessary to revise Saskatchewan's butterflies checklist, and update the scientific names.[4] In the "Machaon" group of Swallowtails, I have used some of the changes that are suggested by Felix Sperling.[7] For the genus *Polygonia*, I have followed the arrangement given by Scott.[6] Other changes are identified in the text.

Wherever there are new species being dealt with that are not recorded in *Butterflies of Saskatchewan*, the basis for these new records is given.[3] An asterisk (*) is placed in front of each new species. Abbreviations are used for directions (i.e., n. = north, s. = south, e. = east, w. = west). In *Butterflies of Saskatchewan*, 135 species of butterflies were recorded for Saskatchewan in 1973.

The present list contains 144 species.

**HESPERIOIDEA**

*HESPERIIDAE — SKIPPERS PYGINAE*

SILVER-SPOTTED SKIPPER — *Epargyreus clarus (Cramer)*
- s. Sask., n. to Wadena and Batoche.

NORTHERN CLOUDY WING — *Thorybes pylades* (Scudder)
- s. Sask., n. to Pelican Narrows and Otter Rapids.

DREAMY DUSKY WING — *Erynnis icelus* (Scudder and Burgess)
- throughout Sask.

SLEEPY DUSKY WING — *Erynnis brizo* (Boisduval and Leconte)
- Tantallon, Hazelcliffe and Round Lake (n. of Whitewood).

JUVENAL'S DUSKY WING — *Erynnis juvenalis* (Fabricius)
- Tantallon, Round Lake (n. of Whitewood), and Oxbow.

AFRANIUS DUSKY WING — *Erynnis afranius* (Lintner)
- s. Sask., n. to Yorkton, Punnichy and Snipe Lake.

PERSIUS DUSKY WING — *Erynnis persius fredericki* (Freeman)
- s. Sask., n. to Deschambault Lake.

GRIZZLED SKIPPER — *Pyrgus centaureae freija* (Warren)
- n. Sask., s. to Weekes and Flotten Lake.

SMALL CHECKERED SKIPPER — *Pyrgus scriptura* (Boisduval)
- Rosefield Badlands, (s.e. of Val Marie) - one male collected by Ronald Hooper on 19 May 1983.

CHECKERED SKIPPER — *Pyrgus communis* (Grote)
- s. Sask., n. to Punnichy, Saskatoon and Frenchman Butte.

*HETEROPTERINAE*

ARCTIC SKIPPER — *Carterocephalus palaemon mandan* (W.H. Edwards)
- n. Sask., s. to Moose Mountain Park, Fort Qu'Appelle, Punnichy and Kerrobert.

*HESPERIINAE*

LEAST SKIPPER — *Ancyloxypha numitor* (Fabricius)
- e. Sask., w. to Moose Mountain Park, Tantallon, Norquay and n. to McBride Lake and Smoking Tent (e. of Hudson Bay).

GARITA SKIPPER — *Oarisma garita* (Reakirt)
- s. Sask., n. to Archerwill, Prince Albert and Pierceland.

RHESUS SKIPPER — *Yvretta rhesus* (W.H. Edwards)
- Fort Qu'Appelle and Rosefield Badlands (s.e. of Val Marie).

UNCAS SKIPPER — *Hesperia uncas* (W.H. Edwards)
- s. Sask., n. to Round Lake (n. of Whitewood) and Sask. Landing Park.

MANITOBA SKIPPER — *Hesperia comma manitoba* (Scudder)
- n. Sask., s. to Pasquia Hills and Nipawin Provincial Park.

ASSINIBOIA SKIPPER — *Hesperia comma assiniboia* (Lyman)
- s. Sask., n. to Somme, Chelan, Saskatoon and Battleford.

*HARPALUS SKIPPER — *Hesperia comma harpalus* (W.H. Edwards)
- Cypress Hills (several collected in Cypress Hills area belong to this subspecies, according to Bill McGuire, Colorado).

PAWNEE SKIPPER — *Hesperia pawnee* (Dodge)
- Redvers.

PAHASKA SKIPPER — *Hesperia pahaska* (Leussler)
- Big Muddy Lake, Rosefield (s.e. of Val Marie).

NEVADA SKIPPER — *Hesperia nevada* (Scudder)
- s. Sask., n. to Wadena and Cutknife.

PECK'S SKIPPER — *Polites coras* (Cramer)
- s. Sask., n. to Otter Rapids and Buffalo Narrows.

DRACO SKIPPER — *Polites draco* (W.H. Edwards)
- Cypress Hills.

TAWNY-EDGED SKIPPER — *Polites themistocles* (Latreille)
- s. Sask., n. to Porcupine Plain, Prince Albert and Meadow Lake Park.

LONG DASH — *Polites mystic dacotah* (W.H. Edwards)
- s. Sask., n. to Bainbridge, Prince Albert and Meadow Lake Park.

DELAWARE SKIPPER — *Atrytone logan* (W.H. Edwards)
- s. Sask., n. to Round Lake (n. of Whitewood), Regina, Buffalo Pound Park, Saskatchewan Landing and Estuary.

*WOODLAND SKIPPER — *Ochlodes sylvanoides* (Boisduval)
- several collected at Val Marie by Keith Roney and Ronald Hooper on 11 August 1983.

HOBOMOK SKIPPER — *Poanes hobomok* (Harris)
- central Sask., n. to Bainbridge and Peerless, s. to Moose Mountain Park and Moose Jaw.

DUN SKIPPER — *Euphyes ruricola* (Boisduval)
- s. Sask., n. to Deschambault Lake and La Ronge.

DUSTED SKIPPER — *Artrytonopsis hianna* (Scudder)
- Kamsack, Tantallon and Crooked Lake.

SIMIUS ROADSIDE SKIPPER — *Amblyscirtes simius* (W.H. Edwards)
- Rosefield Badlands, (s.e. of Val Marie), Val Marie.

OSLAR'S ROADSIDE SKIPPER — *Amblyscirtes oslari* (Skinner)
- Roche Percee, Val Marie and Estuary.

ROADSIDE SKIPPER — *Amblyscirtes vialis* (W.H. Edwards)
- s. Sask., n. to Sturgeon Landing and Otter Rapids.

**PAPILIONOIDEA**

*PAPILIONIDAE - SWALLOWTAILS*

*PARNASSIINAE*

*CLOUDED PARNASSIAN — *Parnassius phoebus smintheus* (Doubleday)
- one collected by Wayne Harris near Fort Walsh on 6 July 1982.

*PAPILIONINAE*

BLACK SWALLOWTAIL — *Papilio polyxenes asterius* (Stoll)
- Lake Alma (probably a stray)

*Clouded Parnassian* *C.R. Wershler*

KAHLI SWALLOWTAIL — *Papilio polyxenes kahli* (F. and R. Chermock)

- e. Sask., w. to Arcola, Fort Qu'Appelle and Simpson, n. to Somme.

BADLAND OLD WORLD SWALLOWTAIL — *Papilio machaon dodi* (McDunnough)

- what was called *P.b. brucei*, is lumped together here with *P. m. dodi*. True *P.b. brucei* occurs in Colorado.
- s. Sask., n. to Crooked Lake and Punnichy.

OLD WORLD SWALLOWTAIL — *Papilio machaon hudsonianus* (Clark)

- n. Sask., s. to Duck Mountain Park, Chelan and Paddockwood.

ZELICAON SWALLOWTAIL — *Papilio zelicaon* (Lucas) [Gothic Swallowtail - yellow form; Nitra Swallowtail - black form].

- s. Sask., n. to Punnichy and Eston.

CANADIAN TIGER SWALLOWTAIL — *Pterourus glaucus canadensis* (Rothschild and Jordan)

- throughout Sask.

*TWO-TAILED SWALLOWTAIL — *Pterourus multicaudata* (Kirby)

- one taken in Cypress Hills by M. Conrad on 9 August 1977; one taken near Bracken by L. Wright in July 1980; one photograph taken in June 1980 by Wayne Lynch s.e. of Val Marie along Frenchman River.

*PIERIDAE - WHITES, MARBLES AND SULPHURS*

*PIERINAE*

CHECKERED WHITE — *Pontia protodice* (Boisduval and Leconte)

- s. Sask., n. to Tantalion, Fort Qu'Appelle and Battleford.

WESTERN CHECKERED WHITE — *Pontia occidentalis* (Reakirt)

- throughout Sask.

MUSTARD WHITE — *Artogeia napi oleracea* (Harris)

- n. Sask., s. to Togo, Chelan, Kinistino and Harlan.

WESTERN MUSTARD WHITE — *Artogeia napi marginalis* (Scudder)

- Cypress Hills.

CABBAGE WHITE — *Artogeia rapae* (Linnaeus)
- s. Sask., n. to Pelican Narrows, La Ronge and La Loche.

*ANTHOCARINAE*

LARGE MARBLE — *Euchloe ausonides mayi* (F. and R. Chermock)
- central Sask., n. to Nipawin Provincial Park, s. to Togo, Eston and Cypress Hills.

*LARGE MARBLE — *Euchloe ausonides palaeoreios* (Johnson)
- Roche Percee area. Two specimens in American Museum of Natural History.

*CREUSA MARBLE — *Euchloe creusa* (Doubleday)
- Briarlee (near Shellbrook) 20 May 1976, collected by Wayne Harris; also collected by Keith Roney and Ronald Hooper at Prince Albert on 8 June 1982.

OLYMPIA MARBLE — *Euchloe olympia* (W.H. Edwards)
- s. Sask., n. to Regina and Dundurn.

*COLIADINAE*

WESTERN COMMON SULPHUR — *Colias philodice eriphyle* (W.H. Edwards)
- s. Sask., n. to Uranium City.

ORANGE SULPHUR — *Colias eurytheme* (Boisduval)
- s. Sask., n. to Sturgeon Landing, La Ronge and Turnor Lake.

QUEEN ALEXANDRA'S SULPHUR — *Colias alexandra alexandra* (W.H. Edwards)
- Big Muddy Lake, Killdeer Badlands, Claydon, Cypress Hills and Estuary.

CHRISTINA SULPHUR — *Colias alexandra christina* (W.H. Edwards)
- s. Sask., n. to Bainbridge, Prince Albert and Frenchman Butte.

GIANT SULPHUR — *Colias gigantea gigantea* (Strecker)
- n. Sask., s. to Duck Mountain Park and Prince Albert.

WESTERN GIANT SULPHUR — *Colias gigantea harroweri* (Klots)
- Cypress Hills.

PINK-EDGED SULPHUR — *Colias interior* (Scudder)
- n. Sask., s. to Somme, Chelan and Harlan.

PALAENO SULPHUR — *Colias palaeno chippewa* (W.H. Edwards)
- Hasbala Lake, Black Lake and Stony Rapids.

DAINTY SULPHUR — *Eurema mexicana* (Boisduval)
- near Round Lake (n. of Whitewood).

*LYCAENIDAE - GOSSAMER-WINGED BUTTERFLIES*

*LYCAENINAE*

AMERICAN COPPER — *Lycaena phlaeas arethusa* (Wolley-Dod)
- Regina.

GREAT COPPER — *Gaeides xanthoides dione* (Scudder)
- s. Sask., n. to Punnichy and Saskatoon.

BRONZE COPPER — *Hyllolycaena hyllus* (Cramer)
- s. Sask., n. to Pelican Narrows and Buffalo Narrows.

RUDDY COPPER — *Chalceria rubidus* (Behr)
- s.w. corner of Saskatchewan, n. to Tompkins and Estuary.

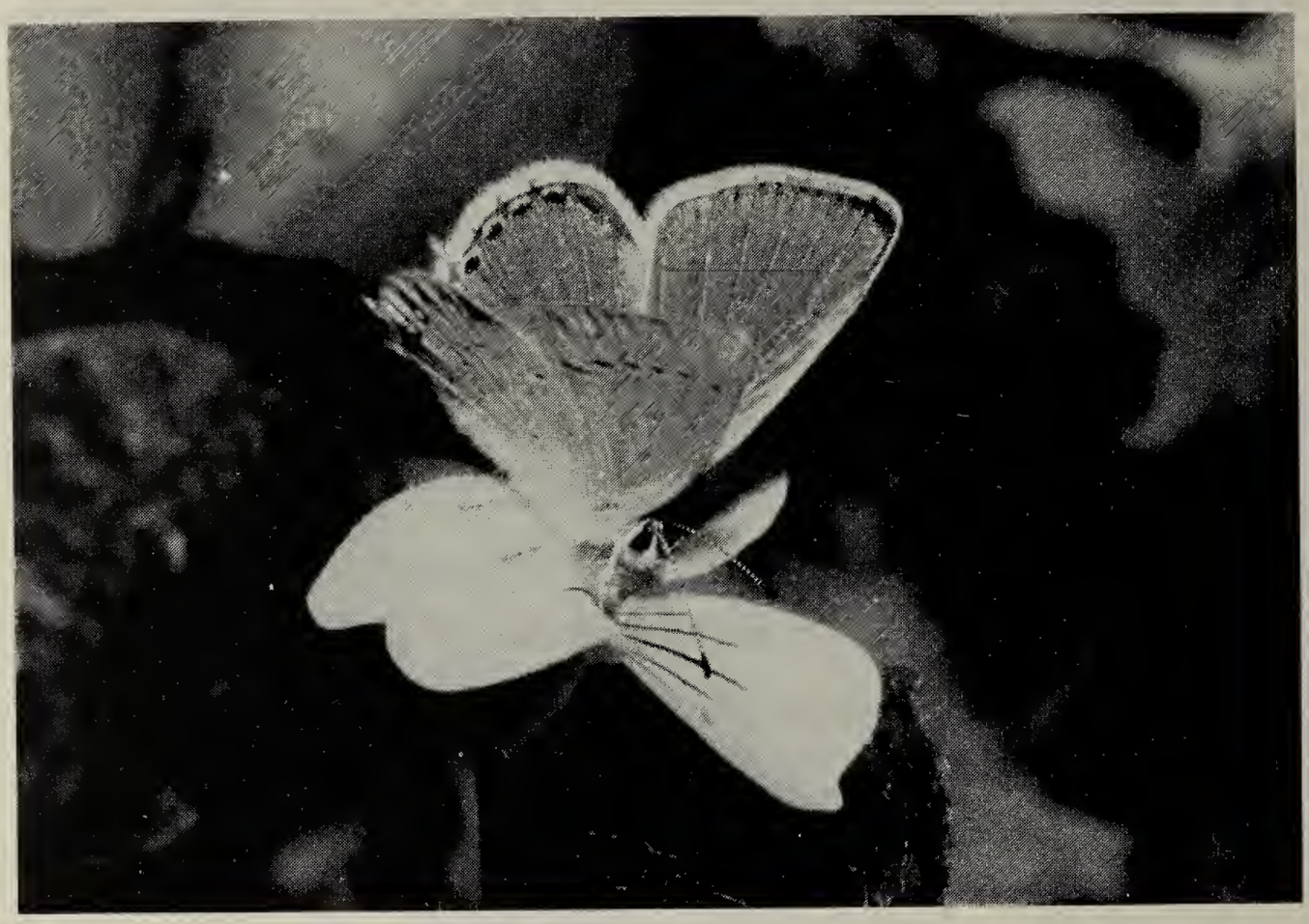
DORCAS COPPER — *Epidemia dorcas* (Kirby)
- n. Sask., s. to Togo, Silver Park, Duck Lake and Harlan.

PURPLISH COPPER — *Epidemia helloides* (Boisduval)
- s. Sask., n. to Bainbridge and Smoothstone Lake.

REAKIRT'S COPPER — *Epidemia mariposa* (Reakirt)
- Cypress Hills, central Sask., e. to Montreal Lake.

*THECLINAE*

CORAL HAIRSTREAK — *Harkenclenus titus titus* (Fabricius)
- s. Sask., n. to Moose Jaw and Tompkins.



*Western Tailed Blue* *C.R. Wershler*

CORAL HAIRSTREAK — *Harkenclenus titus immaculosus* (Comstock)

ACADIAN HAIRSTREAK — *Satyrium acadica watrini* (Dufrane)

- s. Sask., n. to Wadena and Dundurn.

EDWARD'S HAIRSTREAK — *Satyrium edwardsii* (Grote and Robinson)

- Maryfield, Tantallon, Round Lake (n. of Whitewood).

STRIPED HAIRSTREAK — *Satyrium liparops fletcheri* (Michener and dos Passos)

- s. Sask., n. to Bainbridge and Nipawin.

*STRIPED HAIRSTREAK — *Satyrium liparops aliparops* (Michener and dos Passos)

- Killdeer Badlands.

RED-BANDED HAIRSTREAK — *Calycopis cecrops* (Fabricius)

- Limerick.

JUNIPER HAIRSTREAK — *Mitoura siva* (W.H. Edwards)

- Rosefield badlands (s.e. of Val Marie).

BROWN ELFIN — *Incisalia augustus augustus* (Kirby)

- n. Sask., s. to Preeceville, Punnichy, Duck Lake and Harlan.

*WESTERN BROWN ELFIN — *Incisalia augustus iroides* (Boisduval)

- Cypress Hills and Tompkins.

HOARY ELFIN — *Incisalia polios obscurus* (Ferris and Fisher)

- s. Sask., n. to Davin Lake and La Loche.

PINE ELFIN — *Incisalia niphon clarki* (Freeman)

- central Sask., s. to Chelan, Prince Albert and Loon Lake.

WESTERN PINE ELFIN — *Incisalia eryphon* (Boisduval)

- Cypress Hills, n. Sask., s. to Otter Rapids.

GRAY HAIRSTREAK — *Strymon melinus humuli* (Harris)

- s. Sask., n. to Duck Lake.

*Greenish Blue* *Gary Anweiler*

*MARINE BLUE — *Leptotes marina* (Reakirt)
- one specimen taken at Glenside on 11 September 1939 by J. W. Joyce.

REAKIRT'S BLUE — *Hemiargus isola* (Reakirt)
- Tantallon.

WESTERN TAILED BLUE — *Everes amyntula albrighti* (Clench)
- s. Sask., n. to Pelican Narrows, Otter Rapids and Turnor Lake.

SPRING AZURE — *Celastrina ladon lucia* (Kirby)
- throughout Sask.

SPOTTED BLUE — *Euphilotes enoptes ancilla* (Barnes and McDunnough)
- Rosefield Badlands (s.e. of Val Marie), Val Marie.

ARROWHEAD BLUE — *Glaucopsyche piasus* (Boisduval)
- Cypress Hills.

COUPER'S SILVERY BLUE — *Glaucopsyche lygdamus couperi* (Grote)
- central Sask., s. to Silver Park, Prince Albert and Loon Lake.

AFRA SILVERY BLUE — *Glaucopsyche lygdamus afra* (W.H. Edwards)
- s. Sask., n. to Somme and Meadow Lake Park.

*ORO SILVERY BLUE — *Glaucopsyche lygdamus oro* (Scudder)
- Cypress Hills, Val Marie and Killdeer Badlands.

SCUDDER'S BLUE — *Lycaeides argyrognomon scudderi* (W.H. Edwards)
- n. Sask., s. to Togo, Silver Park and Cutknife.

NORTHERN BLUE — *Lycaeides argyrognomon* ssp.
- s. Sask., n. to Crooked Lake and Tompkins.

MELISSA BLUE — *Lycaeides melissa* (W.H. Edwards)
- s. Sask., n. to Sturgeon Landing and Battleford Park.

*Great Spangled Fritillary (right) and Northwestern Silverspot (left)* *J.B. Gollop*

GREENISH BLUE — *Plebejus saepiolus amica* (W.H. Edwards)
- s. Sask., n. to Uranium City.

PEMBINA BLUE — *Icaricia icarioides pembina* (W.H. Edwards)
- Cypress Hills, Killdeer Badlands and Rockglen.

SHASTA BLUE — *Icaricia shasta minnehaha* (Scudder)
- s.w. Sask., e. to Big Muddy, n. to Sask. Landing Park, Eston and Estuary.

ACMON BLUE — *Icaricia acmon lutzi* (dos Passos)
- s. Sask., n. to Lebret, Regina, Saskatchewan Landing and Eston.

YUKON BLUE — *Vacciniina optilete yukona* (Holland)
- n. Sask., s. to Weekes.

PRECAMBRIAN ARCTIC BLUE — *Agriades franklinii lacustris* (Freeman)
- n. Sask., s. to Namew Lake.

PRAIRIE ARCTIC BLUE — *Agriades franklinii* ssp.
- formerly called *rustica*, but our subspecies may be distinct.
- s. Sask., n. to Bainbridge and Prince Albert.

*RIODINIDAE - METALMARKS*

*MORMON METALMARK — *Apodemia mormo* (C. and R.Felder)
- Killdeer Badlands and Val Marie.

*NYMPHALIDAE - BRUSH-FOOTED BUTTERFLIES*

*ARGYNNINAE*

VARIEGATED FRITILLARY — *Euptoieta claudia* (Cramer)
- s. Sask., n. to Bainbridge, Montreal Lake and Smoothstone Lake.

GREAT SPANGLED FRITILLARY — *Speyeria cybele pseudocarpenteri* (F. and R. Chermock)
- s. Sask., n. to Bainbridge and La Ronge.

APHRODITE — *Speyeria aphodite manitoba* (F. and R. Chermock)
- s. Sask., n. to Bainbridge and Buffalo Narrows.

EDWARD'S FRITILLARY — *Speyeria edwardsii* (Reakirt)
- Oxbow, Killdeer Badlands and Cypress Hills.

ZERENE FRITILLARY — *Speyeria zerene garretti* (Gunder)
- Cypress Hills and Eastend.

CALLIPPE FRITILLARY — *Speyeria callippe calgariana* (McDunnough)
- s. Sask., n. to Duck Lake.

ATLANTIS FRITILLARY — *Speyeria atlantis hollandi* (F. and R. Chermock)
- n. Sask., s. to Duck Mountain Park, Chelan and Duck Lake.

BEAN'S FRITILLARY — *Speyeria atlantis beani* (Barnes and Benjamin)
- Cypress Hills.

NORTHWESTERN SILVERSPOT — *Speyeria atlantis lais* (W.H. Edwards)
- s. Sask., n. to Deschambault Lake and Buffalo Narrows.

*HYDASPE FRITILLARY — *Speyeria hydaspe sakuntala* (Skinner)
- one taken in Cypress Hills by M. Conrad on 9 August 1977.

MORMONIA FRITILLARY — *Speyeria mormonia eurynome* (W.H. Edwards)
- s. Sask., n. to Somme and Prince Albert.

BOG FRITILLARY — *Proclossiana eunomia dawsoni* (Barnes and McDunnough)
- n. Sask., s. to Togo, Chelan and Harlan.

SILVER-BORDERED FRITILLARY — *Clossiana selene atrocostalis* (Huard)
- throughout Sask.

MEADOW FRITILLARY — *Clossiana bellona jenistae* (Stallings and Turner)
- throughout Sask.

FRIGGA FRITILLARY — *Clossiana frigga saga* (Staudinger)
- n. Sask., s. to Togo and Raymore.

FREIJA FRITILLARY — *Clossiana freija* (Thunberg)
- n. Sask., s. to Togo, Prince Albert and Harlan, and also Cypress Hills and Besant (1 stray).

*BOISDUVAL'S FRITILLARY — *Clossiana titania boisduvalii* (Duponchel)
- Hasbala Lake, Patterson Lake and Johnson River.

PURPLE LESSER FRITILLARY — *Clossiana titania grandis* (Barnes and McDunnough)
- n. Sask., s. to Somme, Duck Lake and Harlan; also in Cypress Hills and Val Marie (1 stray).

*MELITAEINAE*

CARLOTA CHECKERSPOT — *Charidryas gorgone carlota* (Reakirt)
- s. Sask., n. to Archerwill and Peerless.

HARRIS' CHECKERSPOT — *Charidryas harrisii hanhami* (Fletcher)
- Tantallon and Arran.

NORTHERN CHECKERSPOT — *Charidryas palla* (Boisduval)
- Roche Percee.

*ACASTUS CHECKERSPOT — *Charidryas acastus* (W.H. Edwards)
- s. Sask., n. to Claybank, Sask. Landing Park.

SOUTHERN PEARL CRESCENT — *Phyciodes tharos* (Drury)
- s. Sask., n. to Yorkton, Punnichy and Tramping Lake Park.

NORTHERN PEARL CRESCENT — *Phyciodes pascoensis* (Wright)
- Opler and Krizek (1984) list *pascoensis* as a separate and distinct species from *tharos*.
- n. Sask., s. to Moose Mountain Park, Pike Lake and Kerrobert; also in Wood Mountain and Cypress Hills.

MEADOW CRESCENT — *Phyciodes pratensis pratensis* (Behr)
- Cypress Hills and Cutknife.

TAWNY CRESCENT — *Phyciodes pratensis batesii* (Reakirt)
- placed here as there is evidence of *P. batesii* and *P. pratensis* hybridizing in Cypress Hills. Ferris and Brown also suggest they may be interbreeding.[1]
- throughout Sask.

HEWITSON'S CHECKERSPOT — *Occidryas anicia* (Doubleday and Hewitson)
- Cypress Hills.

EDITH'S CHECKERSPOT — *Occidryas editha hutchinsi* (McDunnough)
- Cypress Hills.

*NYMPHALINAE*

QUESTION MARK — *Polygonia interrogationis* (Fabricius)
- Indian Head.

HOP MERCHANT — *Polygonia comma* (Harris)
- Glen Ewen and Roche Percee.

SATYR ANGLE WING — *Polygonia satyrus* (W.H. Edwards)
- s. Sask., n. to Otter Rapids.

GRAY COMMA — *Polygonia progne progne* (Cramer)
- s. Sask., n. to Otter Rapids.

HOARY COMMA — *Polygonia gracilis gracilis* (Grote and Robinson)
- n. Sask., s. to Candle Lake and Meadow Lake Park.

ZEPHYR ANGLE WING — *Polygonia gracilis zephyrus* (W.H. Edwards)
- Cypress Hills.

GREEN COMMA — *Polygonia faunus rusticus* (W.H. Edwards)
- n. Sask., s., to Duck Mountain Park and Dundurn; also in Cypress Hills.

COMPTON TORTOISE SHELL — *Nymphalis vau-album watsoni* (Hall)
- this western ssp. is listed by Ferris and Brown.[1] central Sask., s. to Moose Mountain Park, Fort Qu'Appelle and Duck Lake.

CALIFORNIA TORTOISE SHELL — *Nymphalis californica herri* (Field)
- Somme, Indian Head, Saskatoon and Brock.

MOURNING CLOAK — *Nymphalis antiopa antiopa* (Linnaeus)
- throughout Sask.

MILBERT'S TORTOISE SHELL — *Aglais milberti* (Godart)
- throughout Sask.

AMERICAN PAINTED LADY — *Vanessa virginiensis* (Drury)
- Welby, Indian Head, Wadena, Hudson Bay.

PAINTED LADY — *Vanessa cardui* (Linnaeus)
- throughout Sask.

WESTERN PAINTED LADY — *Vanessa annabella* (Field)
- Indian Head and Cypress Hills.

RED ADMIRAL — *Vanessa atalanta* (Linnaeus)
- s. Sask., n. to La Ronge and Buffalo Narrows.

*LIMENITIDINAE*

WHITE ADMIRAL — *Basilarchia arthemis rubrofasciata* (Barnes and McDunnough)
- throughout Sask.

VICEROY — *Basilarchia archippus* (Cramer)
- throughout Sask.

*SATYRIDAE - MEADOW BROWNS*

*ELYMNIINAE*

NORTHERN PEARLY EYE — *Enodia anthedon* (Clark)
- e. Sask., w. to Trossachs, Punnichy and Meadow Lake Provincial Park.

EYED BROWN — *Satyrodes eurydice* (Johansson)
- Gainsborough, and Smoking Tent (e. of Hudson Bay).

*SATYRINAE*

LITTLE WOOD SATYR — *Megisto cymela* (Cramer)
- Maryfield, Tantallon and Round Lake (n. of Whitewood).

RINGLET — *Coenonympha inornata* (W.H. Edwards)
- s. Sask., n. to Bainbridge, Nipawin and Meadow Lake Park.

COMMON WOOD NYMPH — *Cercyonis pegala ino* (Hall)
- s. Sask., n. to Bainbridge, Green Lake and Meadow Lake Park.

SMALL WOOD NYMPH — *Cercyonis oetus* (Boisduval)
- s.w. Sask., e. to Killdeer Badlands, n. to Chaplin, Saskatchewan Landing and Estuary.

MANCINUS ALPINE — *Erebia disa mancinus* (Doubleday and Hewitson)
- n. Sask., s. to Somme, Prince Albert and Harlan; also in Cypress Hills.

*Monarch Butterflies* *Juhachi Asai*

RED-DISKED ALPINE — *Erebia discoidalis* (Kirby)
- n. Sask., s. to Maryfield, Fort Qu'Appelle and Dundurn.

COMMON ALPINE — *Erebia epipsodea freemani* (Ehrlich)
- s. Sask., n. to Somme, Prince Albert and Peerless.

RIDING SATYR — *Neominois ridingsii* (W.H. Edwards)
- s. Sask., n. to Shellbrook.

MACOUN'S ARCTIC — *Oeneis macounii* (W.H. Edwards)
- central Sask., s. to Duck Mountain Park, Duck Lake and Harlan, n. to Lynx Lake.

CARY'S ARCTIC — *Oeneis chryxus caryi* (Dyar)
- central Sask., e. to Prince Albert, n. to Lloyd Lake

VARUNA ARCTIC — *Oeneis uhleri varuna* (W.H. Edwards)
- s. Sask., n. to Leross, Saskatoon and Turtleford.

ALBERTA ARCTIC — *Oeneis alberta* (Elwes)
- s. Sask., n. to Punnichy and Batoche.

JUTTA ARCTIC — *Oeneis jutta ridingiana* (F. and R. Chermock)
- n. Sask., s. to Duck Mountain Park, Chelan, and Harlan; also Cypress Hills(?).

*DANAIDAE - MONARCHS*

MONARCH — *Danaus plexippus* (Linnaeus)
- s. Sask., n. to Creighton.


[1] FERRIS, C.D., and F.M. BROWN. 1981. Butterflies of the Rocky Mountain States. University of Oklahoma Press, Norman, Oklahoma.

[2] HOOPER, R.R. 1969. A preliminary list of the butterflies of Saskatchewan. Midcontinent Lepidoptera Series 1(5).

[3] HOOPER, R.R. 1973. Butterflies of Saskatchewan. Sask. Museum of Natural History, Regina. 216 pp.

[4] MILLER, L.D. and F. M. BROWN. 1981. A catalogue/checklist of the butterflies of America north of Mexico. Lep. Soc. Mem. 2.

[5] OPLER, P.A., and G.O. KRIZEK. 1984. Butterflies east of the Great Plains. Johns Hopkins University Press, Baltimore and London.

[6] SCOTT, J.A. 1984. A review of *Polygonia progne (oreas)* and *P. gracilis (zephyrus)* (Nymphalidae), including a new subspecies from the southern Rocky Mountains. J. Res. Lepid. 23(3):197-210.

[7] SPERLING, F.A.H. 1986. Evolution of the *Papilio machaon* species group in western Canada (Lepidoptera: Papilionidae). M Sc. thesis. University of Alberta, Edmonton.

# NOTES ON THE OWLET MOTHS (NOCTUIDAE) OF SASKATCHEWAN

L.G. PUTNAM. 35 Kirk Crescent, Saskatoon, Saskatchewan. S7H 3B1

Among the Lepidoptera, the predominantly drab night-flying Owlet moths (Noctuidae) attract less attention than the glamourous day-flying butterflies. However, in Saskatchewan, the Noctuidae comprise quite a long and varied list of species. Their wing patterns and colour variations, not to mention the more subtle diagnostic characteristics sometimes needed, suffice to interest and challenge the specialist or hobbyist.

The first list of noctuid species of Saskatchewan known to the author was that prepared (unpublished) by Dr. K.M. King, an early Officer-in-Charge of the Dominion Entomological Laboratory at Saskatoon. This arose out of material captured during a lengthy period of light trapping begun in the 1920s. H. McDonald, formerly of the same laboratory, continued light trapping in his own research interests, thereby adding to the species records. With an intended focus on pests of brassicaceous oilseed crops (mostly canola, or rapeseed as it was then known), the author operated a trapping station for a decade near the village of Aylsham, in the northeastern part of the Agricultural part of the province, in the heart of a long-established rapeseed growing area. Five species records new to Saskatchewan were added from this source, although these had been noted elsewhere in Western Canada. This brought the Saskatchewan list to about 342 species. That list was by no means complete (R. Hooper, pers. comm.).

The concern on the part of the workers at the Dominion Entomological Laboratory, and later of those at the Entomology Section of the Agriculture Research Station at Saskatoon with the Noctuidae, arose naturally from the several economically important species included in the family. The important subterranean cutworms are the Pale Western (*Agrotis orthogonia* Morr.), a pest of field crops in the open plains of the province, and the Red-backed Cutworm (*Euxoa ochrogaster* Gn.), a pest of crops in the "Park Belt" and northerly areas, and a wide-spread pest of gardens. Among the climbing cutworms,the Bertha Armyworm (*Mamestra configurata* Wlk.), a notorious pest of the oilseed crops flax and canola, is most notable. A pest of cereal grains, the True Armyworm (*Pseudaletia unipuncta* Haw.) has been destructive locally from time to time. The same applies to the Flax Bollworm (*Heliothis ononis* D. & S.), the Alfalfa Looper (*Autographa californica* Speyer) and the Clover Cutworm (*Scotogramma trifolii* Rott.). Several species taken in Saskatchewan have ranked as pests elsewhere but have been of minor and infrequent consequence here. (See Putnam and Burgess for photos of some economic noctuids.[3])

The purpose of operating a light-trapping station at Aylsham was less a species survey than an abundance survey of economic species. Of the 210 noctuid species identified from that point in the decade, only 53 were taken in each of the 10 years. The rest were identified as follows (number of years taken, followed by number of species in that category, in parenthesis): 9 yr. (25 spp.); 8 (10); 7 (11); 6 (13); 5 (19); 4 (7); 3 (16); 2 (30); and 1 (26). Of those species captured in only four or fewer years of the 10, the average number per year per species was three or less; those caught every year averaged 92 per species per year. Presumably this difference reflects relative abundance,

although King pointed out that comparisons of abundance between species on the basis of light trap captures may be invalid.[2]

The total annual captures of those species that were identified every year, or most years, varied widely within the decade, consistent with population fluctuations typical of insects. None varied at such extremes as the moths of the Red-backed Cutworm. This species was taken in larger total numbers than any other at Aylsham. The extremes were 3, in 1965, to 5834, in 1969. The latter figure contributed by far the most to the 10-year total of 7564. The trend was irregularly downward from 1961 to '65, and upward from '65 to '69, crashing abruptly in 1970. Apparently, a decade is too brief a period to examine population trends exhaustively. Through the observations of McDonald, it is known that the Red-backed Cutworm is sensitive to soil surface conditions for oviposition, and that hatchling survival may be drastically affected by soil moisture conditions. The abundance of Red-backed Cutworms as noted at Aylsham, is in accord with its status as a pest in the "Park Belt" and northerly areas of Saskatchewan. On the other hand, the major subterranean cutworm of the open plains, the Pale Western was taken in seven years at about 4 moths per year, confirming the long-alleged regional distinction.

An apparently high abundance of Red-backed Cutworms during their flight period may reflect a high larval population earlier in the spring of the same year, but it is not necessarily the result of an extensive damaging outbreak. In the Bertha Armyworm, abundance vs. scarcity has to be judged in a frame of reference different from that of the Red-backed Cutworm. In the 10-year period, total annual captures of Bertha Armyworm varied form 3 to 31. Only after the decade proper, in 1971 in the flight period preceding the "great" outbreak of 1971 in the rapeseed crops across the province in that year, did captures at Aylsham reach a total of 91. The general outbreak continued at about the same level in 1972, when 1,074 were captured using a more effective trap. Equivalent captures using the old-style trap may reasonably be estimated at 250 to 300.

King concluded that year-to-year differences in captures of a given species were indicative of actual population changes,[2] but, as we have seen in the cases of the Red-backed Cutworm and the Bertha Armyworm the meaning of such changes has to be interpreted on the basis of the observer's experience with each species.

All those species taken in excess of an arbitrary average of 50 per year were isolated in a separate list, comprising 25 species taken every year, plus one taken in 9 years. In addition to the Red-backed Cutworms the moths of several cutworms common enough to have qualified for common names somewhere, were included in the list: The Dingy, Striped, Clover, Bristly, Glassy, Early and Spotted Cutworms. The Wheathead Armyworm, recorded as an outbreak species at least once in Saskatchewan, made the list. About eight other common-named cutworm moth species were identified at lower numbers.

It is commonly accepted, as claimed by Guppy, that the True Armyworm cannot winter in our latitudes, and therefore reaches Saskatchewan by immigration.[1] It can produce two generations per season here, and the second would normally generate any larval outbreak occurring in cereals. If moths of this species immigrate, a question arises as to how many other species detected at Aylsham might have been immigrants, at least into the district if not into the province. The data shed no light on whether the species taken irregularly and in small numbers were scarce permanent residents, or not suscep-

tible to trapping, or casual invaders. Traps using the more effective ultra violet fluorescent lamps instead of the 100-watt incandescents used during the designated decade might have shed some light on the issue, but would have made it necessary to examine about three times as many specimens, not to mention a greatly increased bulk of "junk" insects.

The order in which the species succeed each other in their first appearances at the trap, from the beginning to the end of the season, is a separate subject. It will merely be noted here that among the first are *Lithophane thaxteri* Grt. and *Litholomia napaea* Morr. They are also among the last to appear in the fall, and therefore may be considered to winter in the moth stage.* Most other species in Saskatchewan have a diapause in the egg, larval or pupal stage, and hibernate in one of those.

Mr. C.G. Devlin, Technician, using the skills in the taxonomy of the Noctuidae acquired first under the direction of Dr. H. McDonald, played an essential role in the identification of material captured at Aylsham. It is a pleasure to acknowledge his contribution. Resort was regularly had to the reference collection of Noctuidae available at the Agriculture Canada Research Station at Saskatoon, where both the author and Devlin were employed when the work described was under way.

[1] GUPPY, J.C. 1961. Life history and behaviour of the armyworm *Pseudaletia unipuncta* (Haw.) (Lepidoptera: Noctuidae) in Eastern Ontario. The Canadian Entomologist 93:1141-1153.

[2] KING, K.M. 1940. The light trap as an indicator of population trends in Noctuidae. Ph. D. Thesis, University of Minnesota (Unpublished).

[3] PUTNAM, L.G., and L. BURGESS. 1979. Insect pests of rape and mustard. *In*: Insect pests and diseases of rape and mustard. Rapeseed Association of Canada Publ. No. 48.

* These species are in the subfamily Cucullinae. A number of other species in the same subfamily overwinter as adults in Saskatchewan, especially those in the following genera: Lithophane, Eupsilia, Xylena and Homoglaea. These can be collected as adults in both October and April. The provincial total for noctuid species now stands at 523. — R. Hooper

# VARIEGATED FRITILLARY BREEDING AT THE PAS, MANITOBA

WALTER KRIVDA, Box 864, The Pas, Manitoba. R9A 1K8

There are only two species known in the genus *Euptoieta* — *E. hegesia* and *E. claudia*. The first is a jungle butterfly ranging into the United States. The second, the Variegated Fritillary, also originates in the new world tropics but migrates across the whole of the United States and most of Canada to reach The Pas in late June or early July. These are rare visits. Several years go by without one being seen. These migrants are small, worn examples which can be seen on the wing for a few weeks. They feed at dandelion blossoms.

Now and then a few specimens can be netted in The Pas area of a locally produced generation — originating from the eggs laid by the southern visitors. These are large dark specimens often remarkably mottled on the underside. Such specimens

are rare and tend to appear after any heat waves we may have past the middle of July.

Last summer I found a strange caterpillar on garden pansies. There was only the one and it was late in the season. It was a surprise to see how many pansies one caterpillar could eat! It continued to feed in the garden until 15 August when it was brought indoors because a severe frost was expected that night. It completed feeding and pupated inside a shoe box in the greenhouse. It finally emerged 22 September 1984 and is a good specimen apart from the right forewing being a bit aborted. The specimen with its pupal case is in the author's collection.

This caterpillar would not likely have survived the killing frosts of the season at The Pas. This is a case of frost eliminating a species that is out of its normal range. This specimen is the progeny of late egg laying on the part of the female, or due to the lateness of the season. It was a surprise that only this one caterpillar was found in that very hot and dry summer of 1984.

The migrating adults were seen in record numbers (two or three per day on town streets) in June and July 1984 at The Pas. The same individuals may have been counted on different days. It was hoped that there would be a local flight of the species but only one large adult was seen in late summer.

There doesn't seem to be any evidence that the fresh adults go south, as do Manitoba-grown Monarch Butterflies. They are born only to be killed by the first autumn frosts. This is a strange waste on Nature's part!

*Tiger Moth larva* *F.A. Switzer*

# RANGE EXTENSIONS FOR HYLID FROGS IN MANITOBA

FREDERICK W. SCHUELER, Herpetology Section, National Museum of Natural Sciences, National Museums of Canada, Ottawa, Ontario, Canada, K1A 0M8 and FRANKLIN D. ROSS, Herpetology Department, Museum of Comparative Zoology, Cambridge, Massachusetts, U.S.A. 02138

As part of the ongoing herpetofaunal survey of Canada being conducted by the National Museum of Natural Sciences, National Museums of Canada (NMC) we collected amphibians and reptiles in central Manitoba in May and June of 1980, assisted by S. Fay Baird and R. Michael Rankin. We were primarily seeking the hybrid zone between American and Canadian toads (eastern *Bufo americanus americanus* and western *B. a. hemiophrys*).[2] Representative samples have also been deposited in the Museum of Comparative Zoology (MCZ).

W.B. Preston and F.R. Cook have mapped our distribution records without documenting them fully, so we report range extensions here. We did not find any nonhylid species beyond their previously known ranges;[5 3 1] the toads are being studied by F.R. Cook and will be reported elsewhere.

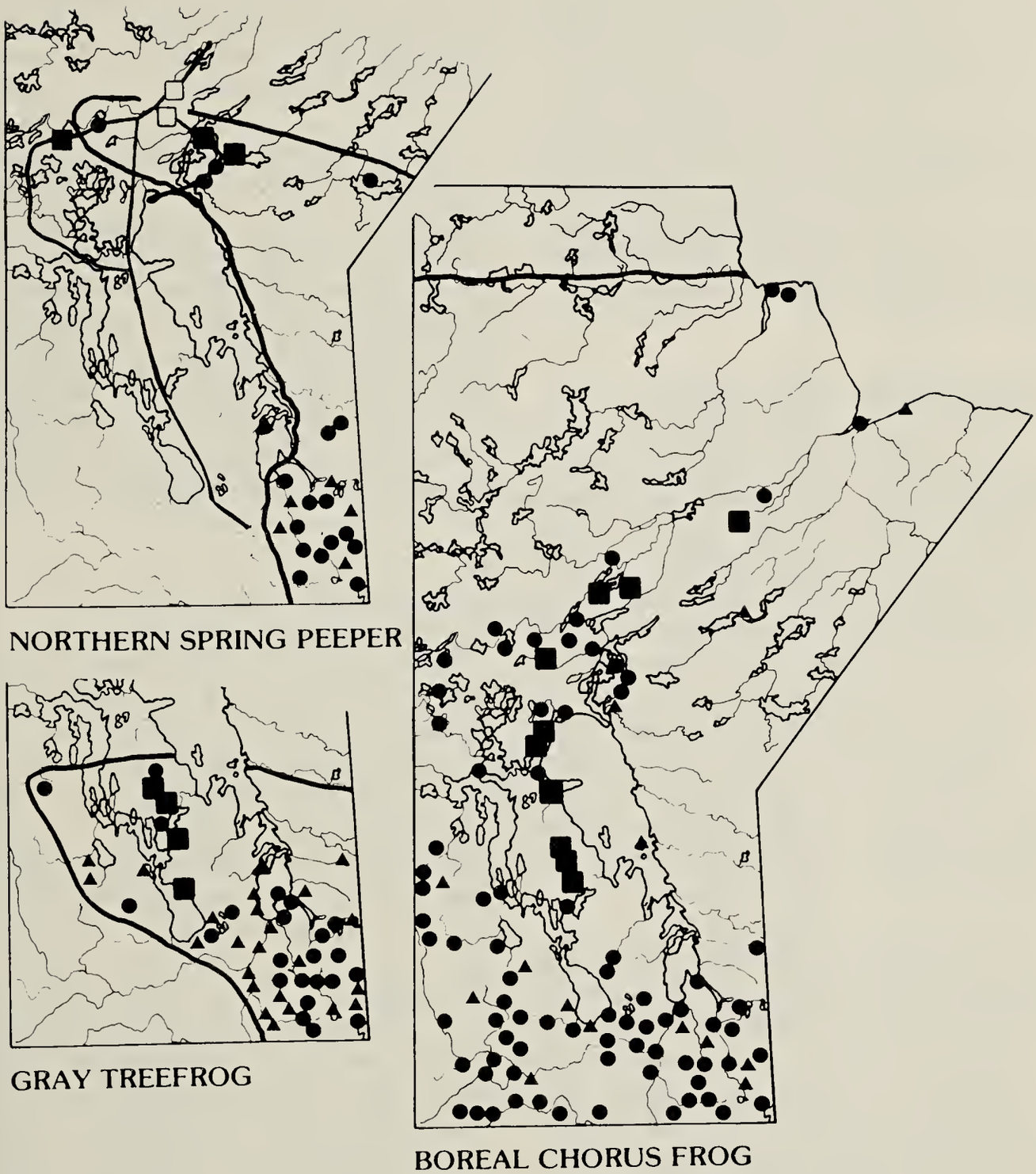
We travelled in two vehicles from Winnipeg to Jenpeg (18-22 May), between Jenpeg and Norway House (22-26 May), from Jenpeg to Thompson to Norway House (27-31 May), from Jenpeg to Winnipeg (by The Pas and the Easterville Road; 27-30 May), to Limestone Bay and Limestone Point (n. end of Lake Winnipeg; 1-6 June), and from Norway House to Winnipeg (7-11 June). Our route is sketched on the Spring Peeper map.

The habitat in central Manitoba is Boreal Forest in the north and east, grading southeastwards into Aspen Parkland in the Interlake area between lakes Winnipeg and Manitoba. Between and west of the lakes, the bedrock is Paleozoic sediment, including much limestone and overlain with glacial lake sediments, but north and east of Lake Winnipeg it is granitic Precambrian Shield rocks with organic and podzolic soils. We collected in shallow bodies of water where amphibians were breeding, both roadside ditches and borrow pits, and natural lake edges, streams, and beaver impoundments.

**Species Accounts**

Tetraploid Gray Treefrog
(*Hyla versicolor*)

On the evening of 18 May we heard this species calling at Lundar Beach, Lake Manitoba. We saw one gray treefrog in a little pond at Steep Rock Junction the next day. That evening the Tetraploid Gray Treefrog was calling abundantly in the Fairford area, and we obtained three samples (for details of locations and sample numbers see Table 1). Ross and Baird listened for choruses along Highway 6 north from Fairford, and heard this species at 5 of 13 stops where they heard anurans calling. At the last site, 17.4 km s. of Devils Lake on Highway 6, a collection was made. North of there, despite various opportunities, especially during the evening of 20 May in the vicinity of Grand Rapids, we did not observe or hear this species. The range in the Interlake is thus extended north to the latitude of previous collections west of Lake Winnipegosis (see Table 1), made by Francis Cook in 1960 and 1970.




*These are the maps from* The Amphibians and Reptiles of Manitoba, *in which our specimen records are included, with the addition of our sight and auditory records. Circles are specimens, squares are our sight and auditory records (open squares are questionable call records of peepers), triangles are other non-specimen records, including the Hecla Island Resource Inventory.*[4] *The heavy lines are estimates of the species' range limits and our route is shown as a narrower line on the peeper map.*

We are acquainted with the call of the Diploid Gray Treefrog (*H. chrysoscelis*) only from recordings, and our specimens have not been karyotyped, so our confidence in the identification of these populations as *H. versicolor* depends on our long familiarity with the call of this species in Ontario and the adjacent U.S.A. Air temperature was 19° C and water was 16° C when the Fairford samples were collected, and we certainly would have noticed the higher frequency call of the Diploid Gray Treefrog under these conditions. All of the gray treefrogs that have been found in the Interlake south of our collections have, moreover, been *H. versicolor*.[5]

**Spring Peeper** (*Hyla crucifer*)

We camped on Ross Island, 4.7 km s.e. of Whiskey Jack Road, from 22 to 26 May and regularly heard intermittent calling by Spring Peepers there and at South Whiskey Jack, but did not catch any. We made a series of collections of this species along the Nelson River, where it was calling in small choruses from many sites. The specimens are all males, taken from the edges of roadside ditches and ponds, often well back from the water or up in bushes (see Table 1). Our most easterly observation was at the end of the Molson Lake Road where, on 30 May, Schueler and Rankin heard peepers calling.

Ross and Baird obtained a single calling male west of Wekusko Lake (4 km w. Highways 391 & 392) on 27 May and heard calling from the campground at the south end of Iskwasum Lake, on Grass River, in Grass River Provincial Park, only 65 km east of the Saskatchewan boundary. That same night Schueler heard isolated peeper-like calls 7.7 km n.e. of the Wabowden turnoff from Highway 391, and on 8 June Schueler and Rankin heard isolated calls 1 km n.w. of the Muhigan River on Milk Lake Road. The intermittent calling by isolated males is reminiscent of the single calling individual on which knowledge of the species' occurrence at Attawapiskat, Ontario, is based.[6] It suggests that these northern populations may stop calling early in the season, so that we arrived too late to assess their abundance. Indeed, we heard our last definite Spring Peeper calls on 31 May, which was the last day the species called at Francis Cook's Maplestone study area at Bishops Mills, Ontario, 10° to the south, where they had begun calling on 7 April.

The only previous record for northern Manitoba was far to the east at Garden Hill, Island Lake; it was collected by Ted Wilson. The narrow extension of the range of the species across Manitoba suggests a distribution limited to the granitic Shield west of Lake Winnipeg, but the northern limit is uncertain. All that we can say is that peepers are at least not widespread or abundant at Thompson and Gillam, but there may be isolated populations north and west of our records.

**Striped Chorus Frog**
(*Pseudacris triseriata maculata*)

We heard and collected this species all along our route, and it was heard by Schueler at Sipiwesk and Ilford and collected at Gillam in June 1975. Our records do not extend the range of the species, but confirm that it is ubiquitous in northeastern and central Manitoba, where it had previously only been known from the coast of Hudson Bay.[5,7]

**Discussion**

In southeastern Manitoba the hybrid zone between the American and Canadian toads roughly coincides with the range limits of many other taxa of amphibians and reptiles, but there is no abrupt faunal change north of Lake Winnipeg.[2] The toad hybrid zone seems to centre on the Nelson River (where the "species" range limits are shown in Conant's field guide), but there is no amphibian species range limit coincident with it.[1] All the hylids occur on both sides of the Nelson or Lake Winnipeg: the Tetraploid Gray Treefrog is eastern and extends north in-

Table 1. LOCATIONS OF SITES AND COLLECTIONS OF HYLID FROGS IN MANITOBA

| *Site Description* | *Location* | *Date* | *Collection #/ Field Series* | *Number of Specimens* | *Reporter/Collector* |
|---|---|---|---|---|---|
| *Hyla versicolor* — Present report | | | | | |
| Lundar Beach (Lake Manitoba) | 50°43'N 96°17'W | 18 May 1980 | heard | - | |
| Steep Rock Junction | 51°26'N 98°32'W | 19 May 1980 | seen | - | |
| Fairford area | ca51°36'N 98°45'W | 19 May 1980 | NMC 20025 | 15 | |
| | | | NMC 20027 | 37 | |
| | | | MCZ Z-06139-68 | 30 | |
| 19.2,20.8,28.1,53.9 km N Fairford on Highway 6 | - | 19 May 1980 | heard | - | F.D. Ross & S.F. Baird |
| 78.7 km N Fairford/ 17.4 km S Devils Lake (Hwy 6) | 52°15'N 98°50.5'W | | NMC 20038 | 3 | |
| *Hyla versicolor* — Previous reports West of Lake Winnipegosis | | | | | |
| 11.4 mi.(18.3 km) W Camperville, Hwy 20 | ca51°54'N 100°25'W | 19 Aug 1960 | NMC 4874 | 1 | F.R. Cook & R.A. Henry |
| 14 mi.(22.5 km) E Minitonas turnoff Hwy 10 | 52°12'N 100°48'W | 8 Jun 1970 | NMC 12255 | 1 | F.R. Cook & J.C. Cook |
| *Hyla crucifer* — Present report | | | | | |
| Ross Island: | | | | | |
| Ross Island, 4.7 km SE Whiskey Jack Road | 54°10'N 97°35'W | 22-6 May1980 | heard | | |
| South Whiskey Jack | 54°26'N 97°59'W | 22-6 May1980 | heard | | |
| 1.5 km NW Seafalls Ferry | 54°15'N 97°37'W | 23 May 1980 | NMC 20080 | 1 | |
| East side of Nelson River: | | | | | |
| 16.3 km S Seafalls Ferry | 54°06'N 97°39'W | 24 May 1980 | NMC 20086 | 5 | |
| 9.7 km S Seafalls Ferry | 54°09'N 97°36.5'W | 24 May 1980 | NMC 20089 | 8 | |
| 2.0 km SSW Norway House | 53°57.5'N 97°51'W | 26 May 1980 | NMC 20099 | 1 | |
| 2.0 km SSW Norway House | 53°57.5'N 97°51'W | 31 May 1980 | NMC 20135 | 1 | |
| 22.7 km S Seafalls Ferry | 54°04'N 97°42'W | 26 May 1980 | NMC 20105 | 9 | |
| 8.8 km S Seafalls Ferry | 54°11'N 97°35'W | 26 May 1980 | NMC 20106 | 1 | |

Table 1. LOCATIONS OF SITES AND COLLECTIONS OF HYLID FROGS IN MANITOBA (continued)

| *Site Description* | *Location* | *Date* | *Collection #/ Field Series* | *Number of Specimens* | *Reporter/Collector* |
|---|---|---|---|---|---|
| Molson Lake Road | 54°13'N 97°27'W | 30 May 1980 | heard | | F.W. Schueler & R.M. Rankin |
| W. Wekusko Lake 4 kmW Hwys 391 and 392 | 54°37'N 99°51'W | 27 May 1980 | NMC 20902 | 1 | F.D. Ross & S.F. Baird |
| Iskwasum Lake, Grass R.P.P. | 56°36'N 100°50'W | 27 May 1980 | heard | | F.D. Ross & S.F. Baird |
| 7.7 km NE Wabowden turnoff Hwy 391 | 54°52.5'N 98°36'W | 27 May 1980 | "peeper-like" calls | | F.W. Schueler |
| 1 km NW Muhigan River on Milk Lake Road | 54°40.5'N 98°38'W | 8 June 1980 | isolated calls | | F.W. Schueler & R.M. Rankin |
| *Hyla crucifer* — previous records | | | | | |
| Garden Hill, Island Lake | 53°53'N 94°39'W | 24 June 1970 | NMC 13766 | 1 | Ted Wilson |
| *Pseudacris triseriata* — previous records | | | | | |
| Sipiwesk | 55°26'N 97°27'W | 11 June 1975 | heard | | F.W. Schueler |
| Ilford | 56°04'N 95°35'W | 11 June 1975 | heard | | F.W. Schueler |
| Gillam | 56°21'N 94°42'W | 11-12 June 1975 | NMC 16874, 16876 NMC 18358 | 3,2 6 | F.W. Schueler |

to the range of the Canadian Toad in the Interlake, the Spring Peeper is eastern and extends far into the range of the Canadian Toad north of the lakes, and the Striped Chorus Frog is western and extends far to the east in northern Ontario. It is possible that the Blue-spotted Salamander (*Ambystoma laterale*), or the Mink Frog (*Rana septentrionalis*) reaches a western limit near the Nelson, but we were not in the area during the breeding season of either species.

On 28 August 1985 Schueler visited Hecla Island, in the southern basin of Lake Winnipeg, and Mark Clarke of the Provincial Park there, showed him an unpublished report — based on a spring and summer survey in 1977, which reports calling by Spring Peepers from mid-May to early June, and the capture of a single individual of the Gray Treefrog complex on 21 June 1977.

This is the first record of Peepers west of the east shore of Lake Winnipeg and the most northerly record of a Gray Treefrog in the eastern Interlake.

**Acknowledgements**

Fay Baird and Mike Rankin were our able companions in the field; we thank Fay especially for taking her small car over extraordinarily rough roads, and Mike for enduring an apprenticeship in the catching of calling hylids under often adverse conditions. We thank the Province of Manitoba for our permit to collect Mink Frogs, Bill Preston for permission to use his maps, Francis Cook for his comments on the manuscript, and the National Museum of Natural Sciences for funding and supporting our travels.

[1] CONANT, R. 1975. A field guide to reptiles and amphibians of Eastern and Central North America. Houghton Mifflin, Boston. xviii $ 429 pp.

[2] COOK, F.R. 1983. An analysis of toads of the *Bufo americanus* group in a contact zone in central northern North America. National Museum of Natural Sciences Publications in Natural Sciences 3. viii $ 89 pp.

[3] COOK, F.R. 1984. Introduction to Canadian amphibians and reptiles. National Museums of Canada, Ottawa. 200 pp.

[4] HYNTKA, J. and W. KLENNER 1979. Hecla Island Resource Inventory. Unpublished report prepared for Manitoba Dept. of Mines, Nat. Resources and Environment. xiii $ 176 pp.

[5] PRESTON, W.B. 1982. The amphibians and reptiles of Manitoba. Manitoba Museum of Man and Nature, Winnipeg. 128 pp.

[6] SCHUELER, F.W. 1973. Frogs of the Ontario coast of Hudson Bay and James Bay. Canadian Field-Nat. 87:409-418.

[7] SMITH, D.A. 1953 Northern Swamp Tree Frog, *Pseudacris nigrita septentrionalis* (Boulenger) from Churchill, Manitoba. Can. Field-Nat. 67:181-182.

# 1986 SPRING WHOOPING CRANE MIGRATION - PRAIRIE PROVINCES

BRIAN W. JOHNS. Canadian Wildlife Service, 115 Perimeter Road, Saskatoon, Saskatchewan. S7N 0X4

The endangered Whooping Crane has been the subject of much study during its struggle back from the brink of extinction. Much of this research has been concentrated on the breeding grounds in Wood Buffalo National Park and the wintering area on Aransas National Wildlife Refuge, Texas.

In an effort to increase our knowledge of Whooping Crane staging areas in prairie Canada, the Canadian Wildlife Service established a Whooping Crane Hot Line in Saskatoon (306-975-5595) to receive reports of migrating cranes from across the prairies (Blue Jay 44:47). An observer is asked to leave a name and

*Whooping Crane* *Fred W. Lahrman*


Figure 1. *Locations of confirmed and probable Whooping Crane sightings during the 1986 spring migration*

telephone number; a return call will be made to obtain details. With the aid of the hot line and its associated publicity, reports of birds believed to be Whooping Cranes began the first week of April and continued until late May, 1986. Sightings increased over previous years from an average of less than 20 per spring migration to more than 100. The most important outcome of the new reporting system is the increase in confirmed sightings. Fourteen reports were confirmed, 36 were probables and 33 were unconfirmed. The remainder were of several species which have a similar appearance.

Three of the reports were of colour-banded birds. A subadult banded in 1984 was observed near Govan on 12 April by Bob Turner and Fred Lahrman. The other two birds were banded in 1985. One of these was seen near Ardath from 11-17 April with two unbanded adults, while the second was observed near Colonsay from 13-17 April with 4 unbanded adults. Locations of other confirmed and probable sightings are plotted in Figure 1.

We were also able to gather important information on feeding and roosting locations used by the cranes. Reports of flying birds help to identify the corridor and the timing of migration.

Information is also required on fall migration. This migration through the prairies usually occurs between mid-September and late October. Whoopers however, may begin migrating in late August, and linger until early November.

Swans, pelicans and snow geese are frequently mistaken for Whooping Cranes. An adult Whooping Crane is snowy white and stands almost 1.5 m (4.5 ft) tall. Young birds, usually associated with the adults, have varying amounts of brown on them. The most distinctive characteristic of flying cranes is the white plumage with contrasting black wingtips (all 10 primary feathers). Their long necks are extended forward and long legs trail behind. Their flight is either flapping with shallow wing beats or spiralling upwards and gliding. The wingspan of a Whooping Crane measures 2.3 m (7.5 ft.), similar to a swan or a pelican. Whoopers usually migrate as singles, pairs or family groups of three, but occasionally concentrate in flocks of up to 11 birds.

Could anyone seeing a Whooping Crane please report the sighting as soon as possible. Observations can be reported anytime to the 24-hour answering service. Sightings reported to local offices of provincial wildlife agencies, museums and the RCMP are all forwarded to the Canadian Wildlife Service.

I wish to acknowledge the excellent cooperation of many individuals who reported migrating Whooping Cranes. Success of this project depends on the help of numerous volunteers.

*Whooping Cranes* *Fred W. Lahrman*

# 1985 CENSUS OF PELICAN AND CORMORANT COLONIES IN SASKATCHEWAN

KEITH RONEY, Saskatchewan Museum of Natural History, Wascana Park, Regina, Saskatchewan, S4P 3V7 and MARVIN HLADY, Saskatchewan Parks and Renewable Resources, 3211 Albert Street, Regina, Saskatchewan. S4S 5W6

A census of American White Pelican and Double-crested Cormorant colonies in Saskatchewan was jointly conducted by Saskatchewan Parks and Renewable Resources and the Saskatchewan Museum of Natural History in 1985. Thirteen pelican and 26 cormorant colonies were censused between 3 and 8 June 1985. Aerial photographs of the colonies were taken during this peak incubation period, and incubating adults were counted from the photos to determine the number of nests.

Totals of 17,931 pelican nests and 16,626 cormorant nests were counted. This is an increase of 15.8% (2451) in pelican and 51.5% (5655) in cormorant nests over the 1982 census.[1] There was also an increase in the number of active colonies; there were three pelican and two cormorant nesting colonies censused which were not active in 1982.

The Cypress Lake pelican colony which was last recorded active in 1969, was reestablished in 1985.[2] The new colony at Basin Lake was reported by the Conservation officer at Humboldt to be active in 1984 (Harvey Janke, pers. comm.). The third additional pelican colony was at Suggi Lake. This nesting site has been used before, but the pelicans have tended to fluctuate between the two nesting islands in Suggi Lake from year to year. However, in 1985, the pelicans occupied both nesting islands. No pelican colonies were abandoned since the 1982 census.

Two pelican colonies, those at Old Wives and Primrose lakes, experienced a decline in the number of nests. Of the seven colonies that increased in numbers the largest increases in numbers of nests occurred at the Lavallee, Suggi, and Kazan lakes' colonies. The greatest percentage increase in the size of the colonies occurred at Lenore, Kazan, Preston and Suggi lakes. All increased by more than 50%, with the Lenore Lake colony almost tripling in size. Comparing the 10 colonies in 1982 with the same 10 colonies in 1985, there was an increase of 560 nests or an average increase of 56 nests per colony.

A new cormorant colony was censused at Basin Lake. It was first reported in 1984 at the same time as the new pelican colony found there.

A new nesting site was established at Dore Lake, bringing the total to three nesting islands occupied at this lake. Three additional nesting islands were used at Churchill Lake, bringing the total there to seven. Since the 1982 census, one nesting site at Last Mountain Lake has been abandoned by cormorants, as have the colonies at Alkali Lake and on the South Saskatchewan River, resulting in a reduction of one in the number of known cormorant colonies in the province.

The three cormorant colonies at Old Wives, Reed and Redberry lakes showed decreases since the 1982 census. The most significant increases in the numbers of nests in a colony occurred at Churchill, Dore, Lavallee, Kazan and Last Mountain

Table 1. 1985 NEST CENSUS OF AMERICAN WHITE PELICAN AND DOUBLE-CRESTED CORMORANT COLONIES IN SASKATCHEWAN

| *Location* | *Date 1985* | *Census Time* | *Pelican Nests* | | | *%* | *Cormorant Nests* | | | *%* |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | *1985* | *1982* | *Change* | *Change* | *1985* | *1982* | *Change* | *Change* |
| Alkali Lake[a] | June 4 | 0800 | - | - | - | - | - | 15 | - 15 | - 100 |
| Basin Lake[b] | June 3 | 1810 | 227 | - | new | - | 745 | - | new | - |
| Churchill Lake | June 6 | 0910 | - | - | - | - | 2508(7)[c] | 790(4) | +1718 | 217.5 |
| Cypress Lake[d] | June 4 | 1240 | 90 | - | new | - | 553 | 329 | + 224 | 68.1 |
| Dore' Lake | June 6 | 1030 | - | - | - | - | 2204(3) | 1464(2) | + 740 | 50.5 |
| Kazan Lake | June 7 | 0900 | 1145 | 609 | + 536 | 88.0 | 3120 | 2544 | + 576 | 22.6 |
| Last Mountain Lake | June 3 | 1835 | - | - | - | - | 1764(3)a | 1202(4) | + 562 | 46.8 |
| Lavallee Lake | June 6 | 1545 | 4897 | 3569 | +1328 | 37.2 | 1615 | 899 | + 716 | 79.6 |
| Lenore Lake | June 3 | 1740 | 162 | 42 | + 120 | 285.7 | 853 | 651 | + 202 | 31.0 |
| Mud Lake | June 3 | 1710 | 462 | 437 | + 25 | 5.7 | 26 | 27 | - 1 | - 3.7 |
| Old Wives Lake | June 4 | 0930 | 2184 | 2617 | - 433 | - 16.5 | 96 | 147 | - 51 | - 34.7 |
| Preston Lake | June 5 | 1510 | 157 | 95 | + 62 | 65.3 | - | - | - | - |
| Primrose Lake | June 8 | 1445 | 6652(2) | 6822(2) | - 170 | -2.5 | 1217(2) | 1041(2) | + 176 | 16.9 |
| Redberry Lake | June 4 | 1625 | 347 | 240 | + 107 | 44.6 | 43 | 53 | - 10 | - 18.9 |
| Reed Lake | June 4 | 1000 | - | - | - | - | 45 | 141 | - 96 | - 68.1 |
| South Saskatchewan River | June 4 | 1300 | - | - | - | - | - | 2 | - 2 | - 100 |
| Suggi Lake | June 5 | 1020 | 1608(2) | 1049 | + 559 | 53.3 | 1837(2) | 1666(2) | + 171 | 10.3 |
| TOTAL NUMBER NESTS | | | 17,931 | 15,480 | +2451 | 15.8 | 16,626 | 10,971 | + 5655 | 51.5 |
| Number of islands | | | (13) | (10) | (+3) | | (26) | (24) | (+2) | |
| Average nests/island | | | 1379 | 1548 | - 169 | - 10.9 | 639 | 457 | + 182 | 39.8 |

[a] Abandoned since 1982 census.
[b] First reported active in 1984.
[c] Number of nesting islands, if more than one.
[d] Last reported active in 1969.

*Cormorant Colony, Perry's Point, Last Mountain Lake* *Gary Anweiler*

lakes. Highest percentage increases in colony size ocurred at Churchill, Lavallee, Cypress and Dore lakes, with all increasing by more than 50%. The Churchill Lake colony more than doubled in size. Comparing the 24 colonies common to the two surveys, there was an increase of 2739 nests or an average increase of 114 nests per colony.

In conclusion, the pelican and cormorant picture is an optimistic one. Both species experienced an increase in the total number of nests as well as an increase in the average number of nests for the same established colonies between the 1982 and the 1985 counts. Also of great importance is the establishment of new nest sites for both species. This factor speaks well for assuring the continuance of these species. Continued protective legislation and public awareness is also essential in maintaining the present population levels of these two species.

**Acknowledgements**

We thank Dave Dalke of Saskatchewan Parks and Renewable Resources, for capably piloting the census. Thanks are also extended to Larry Doupe, Superintendent, Prince Albert National Park, and the personnel of the Department of National Defence, Medley, Alberta, for granting permission to census the colonies at Lavallee and Primrose Lakes, respectively.

[1] RONEY, K., and M. HLADY. 1984. 1982 Census of Saskatchewan White Pelican and Double-crested Cormorant Colonies. Blue Jay 42:77-82.

[2] VERMEER, K. 1970. Colonies of Double-crested Cormorants and White Pelicans in Saskatchewan. Canadian Field - Naturalist 84:39-42.

# AMERICAN WOODCOCK SEEN IN EAST-CENTRAL SASKATCHEWAN

CURTIS POLLOCK, Box 40, Hyas, Saskatchewan S0A 0L0

On the afternoon of 13 May 1984 Marilyn Pollock and I were "Sunday driving" (i.e. birdwatching) west of Preeceville, on the Assiniboine River in east-central Saskatchewan.

We drove west of town on highway No. 49 and, upon reaching the Hazel Dell access road turn-off [about 14 mi. W], we turned north onto the municipal grid road rather than towards the hamlet of Hazel Dell, which lies about half a mile south of the highway.

Before I had gone even 10 meters down the grid road and was, consequently, still travelling at a slow speed, Marilyn shouted at me to stop as she had seen a bird alongside the road. I brought the vehicle to a stop as quickly as I could without alarming the bird. Marilyn was already flipping hurriedly through the field guide we had with us, "Birds of North America" by Robbins et al, knowing what she had seen but too excited to remember the name.[9]

Finding the shorebird section, she pointed to the illustration of the American Woodcock and exclaimed, "There!" I immediately replied that it must have been a Common Snipe as we don't have the woodcock in our area, but she objected vehemently that she *knew* what she had seen, citing the cinnamon color of its underparts and the lateral black marking on its head.

Getting excited myself, I jumped out of the van and began to move cautiously down the road. Spotting the bird on the shoulder of the unpaved road, I quickly focussed my 7-15x35 binoculars on it and then "zoomed in." It was a plump, short-legged, long-billed bird with large eyes set high in its head, of a general cinnamon color on the underparts, its back darker with a scaly pattern — beyond a doubt, a woodcock!

I quickly noted these details in my mind, for the bird had "ducked down" out of sight amongst the weeds on the road side slope of the ditch. In the bottom of the ditch, which was very muddy yellow clay, was a large puddle of runoff water. Opposite this, across the ditch, was an aspen-willow thicket, which may have been used as a cattle pasture.

In The Birds of Canada, Godfrey writes that they may be found "in spring...in or near areas of low—mature open mixed-wood or hardwood or alder-willow thickets...are likely to be found in the vicinity of soft, moist soils suitable for the production of earthworms. Sometimes in dusk or darkness the birds feed in open fields or roadside ditches at considerable distances from woodland."[1]

I caught another glimpse of the bird, nervously eyeing me as I edged closer, until it suddenly "exploded" from its cover and rose swiftly high into the air with a peculiar flight. Its wings, which were positioned rather high on its back, made a distinct whistling sound as it flew rapidly away with a swift, direct flight, first to the west, and then south across the highway, dropping suddenly and abruptly into a row of willows in the middle of a large, partially-submerged haymeadow.

Although I immediately drove as close as I could to this spot, it was too far away from the road to even hope to see the well-camouflaged bird again and, lacking

the proper foot wear to cross the sodden meadow, we had to be content with the sighting we had, which was easily sufficient for an unquestionable identification.

It was not until later, after obtaining a copy of the Field Checklist of Saskatchewan Birds (6th edition) by Saskatchewan Culture and Recreation (compiled by Robert Kreba of the Museum of Natural History) that I realized that this species remains on the hypothetical list for this province.[4] Had I only taken our camera that day, I could have documented its occasional presence in Saskatchewan to place it on the official checklist.

Although the American Woodcock was on the first official checklist, in 1911, of species occurring in the province, it was subsequently removed because, as Houston, Houston and Gollop say, "There are unusually dubious sightings for Woodcock."[3]

It was put on the 1911 list by virtue of a record by J.B. Tyrrell, who wrote that on 8 August 1892, his party flushed a woodcock from "among the willows over a soft muddy, swampy flat" along the Fond du Lac River between Middle Lake and Stony Lake.[6]

Although this record was cited by Preble (1908) and by Robert W. Nero, the latter wrote "...it has long been supposed that Tyrrell was mistaken in his identification of this species, e.g., it is not listed by Macoun and Macoun (1909). W. Earl Godfrey informed me (pers corr., 1961) that he has not used the record for his range summary for Canada. C. Stuart Houston, in an unpublished article, expressed the belief that a Common Snipe or a dowitcher had been flushed and mistaken for a woodcock. Unfortunately, Tyrrell does not say how he distinguished the bird.

"That this record is not beyond the bound of probability is suggested by a generally accepted record for a woodcock in the end of August, 1879, at York Factory near the mouth of the Churchill River on Hudson Bay (Dr. R. Bell in Preble, 1902:94)."[6]

The second record of the species' occurrence in Saskatchewan consists of "vague reports of possible sightings at Oxbow and Moose Mountain by Mitchell," without sufficient detail to make a judgement as to their validity (Kreba, pers. comm.).[5] [8]

Nor was there any detail provided with the third record for the province, a sighting in the Qu'Appelle River valley east of Craven by Sylvia Harrison and Pearl Guest in 1960,[2] which was "considered doubtful" by Nero and Houston, and the species was "not admitted to the provincial list" in their revision.[7] Kreba, too, considers the "record dubious" (pers. corr.).

The only other published record of the possible occurrence of the species in the province is by Kreba, who "heard one or two on the shore of Little Kenosee Lake, Moose Mt. Provincial Park, on May 5 and 6, 1978."[3] However, he has since come to doubt the accuracy of this voice identification, believing instead that the "peent" notes which he heard "from a distance away across the lake...were likely from goldeneyes, not woodcocks." (pers. corr., Jan.28, 1986).

The only other known possible identification of the species in Saskatchewan is an unpublished sight record, apparently in the Regina area, by Bob Luterbach, the details of which were not made available to me.

As noted previously, Godfrey did not mention any of the then-known records in his range summary for the species in The Birds of Canada, in which he wrote, "Breeds from southeastern Manitoba ..."

However, Kreba wrote me that "The Moose Mountains could support a small population of breeding woodcock...There could also be a small breeding population in your general area as well."

While I would not hypothesize on the possibility that the species may breed in the upper Assiniboine area, there is no doubt whatsoever in my mind as to the identity of the species which we saw that day!

**Acknowledgements**

I wish to thank Bob Kreba, who provided me with data and particulars regarding the previous sightings of American Woodcock in the province.

[1] GODFREY, W.D. 1986. The birds of Canada. National Museums of Canada, Ottawa. 595 pp.

[2] HARRISON, SYLVIA. 1960. Woodcock sighted in Qu'Appelle valley. Blue Jay 18(4):160.

[3] HOUSTON, C.S., M.I. HOUSTON and J.B. Gollop. 1981. Saskatchewan bird species — hypothetical and rejected. Blue Jay 39(3):196-201.

[4] KREBA, BOB. 1983. Field checklist of Saskatchewan birds, 6th edition. Museum of Natural History, Regina.

[5] MITCHELL, H.H. 1924. Birds of Saskatchewan. Can. Field-Nat. 38:101-118.

[6] NERO, R.W. 1963. Birds of the Lake Athabasca region, Saskatchewan. Sask. Nat. Hist. Soc. Spec. Publ. No. 5, Regina.

[7] NERO, R.W. and C.S. Houston. 1963. Additions to the checklist of Saskatchewan birds. Blue Jay 21(4):132.

[8] NERO, R.W. and M.R. Lein. 1971. Birds of Moose Mountain, Saskatchewan. Sask. Nat. Hist. Soc. Spec. Publ. No. 7. Regina.

[9] ROBBINS, C.S., B. BRUUN, and H.S. Zim. 1983. Birds of North America. New York, NY.

ED. NOTE: This woodcock sighting is about 180 mi. (285 km) northwest of the 1983 nest reported by Nero (Blue Jay 44(2):120-122), although less distant from other sightings within Riding Mountain National Park. Although farther northwest than known breeding sites it is still 550 mi. (880 km) SSE of Tyrrell's siting and about 530 mi. (848 km) SW of the one reported from York Factory.

# FIRST BAND-TAILED PIGEON IN YORKTON AREA

JOYCE ANAKA, Box 211, Yorkton, Saskatchewan. S3N 2V7

On 28 August 1985 I had the birding highlight of the summer. As I walked out to look at Good Spirit Lake from the south shore a large, unfamiliar, pigeon-like bird landed on top of a dead tree 50 ft. away. For approximately 5 minutes I watched it through 8 x 10 binoculars while it watched me with interest — head weaving and bobbing.

While observing it I jotted down its characteristics on a piece of paper I had in my pocket. The most obvious were the black-tipped, yellow beak, red eyes and yellow feet. There was a white strip behind the eye and a very dark, almost black area behind the white strip. The body was overall a very pale, light brown with a hint of darker color in the wings but no wing marks, bars or other marks other than those noted on the nape of the neck and head.

I drew a rough sketch of it before it flew off. It went about 100 yards west along the lake bank and again landed on a dead tree. I went to pick up the camera but before I could get into range the bird flew off to the south. I checked the area but could not locate it again.

With the aid of my sketch and notes on field marks Bill identified the bird as a Band-tailed Pigeon. This is the first sight record of this species for this part of Saskatchewan.

# LAZULI BUNTING AT ROSTHERN

VICTOR C. FRIESEN, P.O. Box 65, Rosthern, Saskatchewan. SOK 3R0

Although the high temperature for the Rosthern areas in Saskatchewan on 14 May 1986 was a mild 13° C, much of southern Alberta was experiencing a record blizzard that day. The cold front and accompanying snow was forecast to be in our province, including Rosthern, overnight, with a predicted high next day of 4° C.

At 1930 h the sun was still shining through a partly cloudy sky; the town was bathed with hazy sunlight. A small, sparrow-sized finch landed in the freshly mowed grass about 5 m away from a back window. What a vivid contrast of attractive colouring — the lush green of new grass a background for a bird with bluish head, cinnamon-orange banded breast, and pure-white belly.

"That has to be a Lazuli Bunting," was my one thought as I reached for my Peterson's *Field Guide to Western Birds* to confirm my observation. It was the male, of course, which I was seeing, and it soon flew through a wire mesh fence and into some trees in a neighbour's yard. When I wrote up my sighting a half hour later, the sky had become completely overcast with the incoming weather system, and the lighting conditions had deteriorated considerably.

Godfrey reports that the breeding distribution of the Lazuli Bunting extends into southern Saskatchewan ("Shaunavon, Moose Jaw, Qu'Appelle Valley, probably Estevan, perhaps rarely Regina where a pair summered.")[4] Belcher lists the species as an "occasional transient" for Regina."[1] Farther north in the province, Gilliland and Gollop refer to the bird's status at Saskatoon as a nonbreeding summer visitor, accidental ("reported in no more than 8 of the 16 years from 1966-1981") /also transient during spring migration. In fact, in the period specified, there were only two sightings: 4 July 1973 and 14 May 1976.[3] (Note that my sighting occurred exactly to the day a decade later than the last one for Saskatoon.)

To my knowledge, the appearance of the Lazuli Bunting at Rosthern, which is 60 km northeast of Saskatoon, represents, then, its most northerly occurrence in Saskatchewan. Pough states that these buntings "seem to have an especially strong tendency to move into new localities, at least in years of high populations."[6] However, this one bird's brief visit here may have been related to the unusual weather conditions. I recall that my first contribution to *Blue Jay*, in 1963, dealt with several warbler sightings occasioned by the arrival of a marked cold front.[2]


[1] BELCHER, M. 1961. Birds of Regina, Spec. Publ. No. 3. Sask. Nat. Hist. Soc., Regina. 76 pp.

[2] FRIESEN, V. 1963. Warblers at Rosthern. Blue Jay 21:123-124.

[3] GILLILAND, M. and B. GOLLOP. 1982. Revised date list of Saskatoon birds, 3rd edn. 9 pp.

[4] GODFREY, W. E. 1986. The birds of Canada. Nat. Mus. of Canada, Ottawa. 595 pp.

[5] PETERSON, R. T. 1961. A field guide to western birds. Houghton Mifflin, Boston. 366 pp.

[6] POUGH, R. H. 1957. Audubon western bird guide. Doubleday, Garden City, N. Y. 316 pp.

# A SUMMER TANAGER IN MANITOBA

JIM PURDY, Box 1029, Russell, Manitoba. R0J 1W0

*Male Summer Tanager, Silverton, Manitoba* *R.F. Koes*

On 2 April 1986 I sighted an unusual bird at the E & V Dunn's Hereford Ranch, 5 mi. east and 3 mi. north of Russell, Manitoba. It was immediately recognised as a rare bird, so rare in fact, that the notation in my field notebook records the sighting simply as "new bird".

This "new bird" was about the size of an Evening Grosbeak, though perhaps somewhat smaller. The head, breast, and tail were rosy-red, possibly with a hint of black. The wings and back appeared dusky or dirty-red; the very tips of the wings may have been touched with black but nowhere on the bird were any black patches observed. The bill seemed longer and more slender than the grosbeak's and appeared medium in colour.

The bird was observed taking food from the surface of the snow and from bare patches of straw. These were seen, with the aid of binoculars, to be honey bees. Several years ago a hive of honey bees took up residence in the west-facing wall

of Evin Dunn's house. On sunny, warm days, even in the midst of winter, activity was often observed around the nest entrance. As the snow melted in the spring, dead bees would become exposed on the snow and ground under the nest.

The bird was observed five times on 2 April, from 1730 h till 1830 h under good lighting conditions through 7 x 35 binoculars at an approximate distance of 40 feet. There had been strong easterly winds most of the day. The temperature was above freezing but cold.

Several possible identifications were quickly eliminated. The heavy, crossed bill of the crossbills as well as the black wings and tail of the Red Crossbill and the conspicuous white wing-bars of the White-winged Crossbill and Pine Grosbeak were lacking. The bird was a dull, not a bright red as in the Scarlet Tanager and the wings were not black; it also lacked the high crest and black bib of the Cardinal. All of these obvious alternatives, with the exception of the Cardinal, were familiar to the author. It was with great excitement that the identification of male Summer Tanager was contemplated.

This sighting was reported verbally on 2 April to Jim Spear, Sr., of Russell, a local, avid birder, and H.W.R. Copland of the Manitoba Museum of Man and Nature, Winnipeg.

On 7 April, the bird was again observed several times. From observations at 15 feet from it sitting on a fence, feeding on dead bees from the ground, and hawking flying insects (also presumed to be bees) there remained no doubt about the identification: male Summer Tanager. I observed the bird under various weather conditions and at different times of day, both alone or in the presence of Dark-eyed Juncos, Brewer's Blackbirds, Rusty Blackbirds or Evening Grosbeaks on 2, 7, 8, 9, 11, and 12 April.

This bird was seen by at least 17 people, including Jim Spear, Sr., and Jim Spear, Jr., both of Russell, on 5 April; Jean Horton, Hazel Patmore, and Edith Kerr, all of Brandon, on 9 April; Rudolf Koes and Russell Tkachuk of Winnipeg and Norman and Donna Short of Rivers, on 12 April. Koes, Tkachuk and Short took numerous photographs to verify and document this sighting. The latter also managed extensive footage on video of the Summer Tanager sunning itself on the roof and eves of the house and catching and eating insects.

The last recorded sighting of the tanager was made by me in the early evening of 12 April. Unsuccessful attempts to sight the bird were made by Bill Walley of Dauphin on 13 April and Cal Cuthbert of Brandon on 16 April. Cuthbert's unproductive endeavor led him to speculate that the tanager may have succumbed to the elements. However, an unconfirmed sighting made by Larry Chuckree, 3 mi. south-west of the Dunn farmstead was reported to Jim Spear, Sr., on 3 May. I attempted to follow this lead and though Chuckree's verbal description corresponded to the Summer Tanager, no further sightings had been made at the time of this writing.

Range maps indicate that the eastern and southern United States are the normal distribution for this species.[8] Godfrey includes the Summer Tanager in the 1986 revision of "Birds of Canada" as casual in eastern Canada and accidental in Manitoba and Saskatchewan.[3]

The "Manitoba birds field check-list" includes the Scarlet Tanager as occurring regularly and the Western Tanager as occurring irregularly in Manitoba. No mention is made of the Summer Tanager.[1] Unfortunately, this list does not include every species that has been reported in the province. Previous documented sightings of the Summer Tanager within Manitoba are as follows:

- 28 May 1953, one male, 11 mi. n.e. of Portage la Prairie, sight record by Mrs. Norman Cuthbert and family[6]
- 24 May 1966, one first year male, Woodlands, R. Langrell, specimen in Manitoba Museum of Man and Nature[9]
- 25 May 1966, one immature male, found dead on Rahl's Island in the Saskatchewan River near The Pas, Harvey Anderson, specimen in Sam Waller's Little Northern Museum[2]
- 11, 13-18 November 1978, one specimen, Selkirk, Mr. & Mrs. W.W. Sargent, died 18 November, specimen in Manitoba Museum of Man and Nature[9]
- 13 June 1981, one pre-adult male found dead, near Brandon, specimen in B.J. Hales Museum, Brandon[9]
- 14-15 June 1983, one banded individual, Delta, S.G. Sealy[4]
- 19-27 May 1984, one adult male, n. of Birds Hill Provincial Park, G. & J. Lowden and others, photographed.[5]

A.C. Bent notes that the feeding habits of the Summer Tanager have not been thoroughly studied, but it has been observed as an avid eater of bees and wasps. It has been seen catching bees out of the air and is often considered a pest in and around apiaries.[10] Martin, et al. confirm the lack of information available on the food habits but note an almost exclusive diet of insects.[7] My observations concur with Bent and Martin's tentative conclusions regarding the feeding habits of the Summer Tanager.

In the 12 years that I have been actively birding in western Canada, this sighting of the male Summer Tanager has been my most exciting and rewarding experience.

**Acknowledgements**:

I wish to express my gratitude to Rudolf Koes for his critical review of this manuscript and especially for supplying the list of provincial sightings.

[1] ANONYMOUS. 1979. Manitoba birds, field check-list (revised). Man. Mus. of Man and Nature, Winnipeg.

[2] GODFREY, W.E. 1966. A Summer Tanager in Manitoba. Can. Field-Nat. 80:254.

[3] GODFREY, W.E. 1986. The birds of Canada: revised edition. Nat. Mus. of Canada, Ottawa.

[4] GOLLOP, J.B. 1983. The nesting season: Prairie Provinces Region. American Birds 37:999.

[5] GOLLOP, J.B. 1984. The spring migration: Prairie Provinces Region. American Birds 38:927.

[6] LAWRENCE, A.G. 1953. Chickadee notes No. 1678. Winnipeg Free Press, 17 July 1953.

[7] MARTIN, A.C., H.S. ZIM and A.L. NELSON. 1961. American wildlife and plants: a guide to wildlife food habits. Dover Publ. Inc., New York.

[8] ROBBINS, C.S., B. BRUUN and H.S. ZIM. 1983. Birds of North America (expanded and revised). Golden Press, New York.

[9] ROUNDS, R.C. 1981. New record of a Summer Tanager in Manitoba. Blue Jay 39:225.

[10] TERRES, J.K. 1980. The Audubon Society encyclopedia of North American birds. Alfred A. Knopf, New York.

# CATTLE EGRET AT LA RONGE, SASKATCHEWAN

ROD SPOONER, BOX 450, LA RONGE, SASKATCHEWAN. S0J 1L0

In mid-October 1985, a medium-sized, white bird was observed being harried near our house by a group of Common Ravens. The bird settled awkwardly in some alders at the lakeshore and I went down, pinned it with a branch, and brought it up to the house. According to *The Birds of Canada* it was a Cattle Egret.[2] It was about 15 to 17 in. long, pure white, with a straight yellow bill which was fairly stout. Its legs were the bluish-grey of an immature bird. The yellow bill separates it from the Snowy Egret and immature Little Blue Heron; the relatively small size differs from the much larger Common Egret.

The bird was very thin, even wasted, and was only a weak, erratic flyer during my brief observation. I put it under my trailered boat in the hopes that the ravens would not discover it until I could return later in the day. However, it had disappeared within a couple of hours. It is probable that a cat made a meal of it. This bird was obviously beleaguered in our Boreal Forest in late fall, with a skiff of snow on the ground and a raw wind blowing.

The revised *Birds of Canada* reports the first sighting in Saskatchewan as 1974, with records also of birds in Alberta, British Columbia and the Mackenzie District, Northwest Territories. The closest record to La Ronge is apparently Kinistino.[1]

[1] BELCHER,M. 1980. Birds of Regina. Sask. Nat. Hist. Soc. Spec. Publ. 12. Regina, Sask. 151 pp.

[2] GODFREY,W.E. 1986. The birds of Canada: revised edition. Nat. Mus. of Canada, Ottawa. 595 pp.

# BREWER'S BLACKBIRDS SUCCESSFULLY NEST IN BIRDHOUSE

JEAN BANCROFT, 306-200 Tuxedo Avenue, Winnipeg, Manitoba. R3P 0R3

In early spring flocks of Brewer's Blackbirds appear about our open farmlands, towns and cities. More recently they seem to be flourishing because we have never had such large numbers remain at Whytewold, where our summer cottage is located (at the south end of Lake Winnipeg). In fact, during the summer of 1985, cottagers began to feel that so many black-looking birds, including Common Grackles, Red-winged Blackbirds and Brown-headed Cowbirds, were an ominous sign.

Not far from our property a new cottage was being built and on 5 June I went to investigate. In the midst of all the construction a pair of Brewer's Blackbirds had chosen to nest in one side of a two-compartment, green nest box 3 m from the side of the new house. The box was approximately 30 x 20 x 17.5 cm and was attached to the trunk of a Manitoba Maple, 3.6 m off the ground; the entrance holes had been enlarged unevenly, presumably by a squirrel, to 6.25 cm, and a nail served as a stoop.

Two young were seen at the entrance of the nest box moments before an adult came with food. The next day the alarmed male flew about giving loud repetitive "chucks." When I drew away a little, the female came with food and I saw three young. During the next few days both male and female fed the young. On 7 June the parent birds were anxious to feed the young but were hesitant due to the presence of myself and the property owner; they kept flying in and around the trees with a cacophony of "chucks." Several other Brewer's appeared at the same time and joined in the chorus. After the owner left, the male came with a winged insect, and put its beak right down the young one's throat.

At 0750 on 10 June both male and female flew around giving the usual loud calls; they would not go near the nest box. The three young, crowded in their small compartment, gave quiet "chucks." In the afternoon one fledgling came over halfway out, squawking loudly, but the parents did not heed. Then it pulled itself back into the box, exercised its wings, and again nearly came out. Later there were, above the nest box, two stub-tailed fledglings in the leafy branches of the tree. The third fledgling still had not come out after a half hour, and was still in the nest box at a later check.

There are apparently only three previous records of members of the blackbird family (Icteridae) nesting in nest boxes. Two were of Red-winged Blackbirds and one a Common Grackle (pers. comm., R.W. Nero, 1986). Thus, this is evidently the fourth record for an icterid and the first for the Brewer's Blackbird.

# GREAT GRAY OWLS APPARENTLY FEEDING ON FROGS ON ROADS AT NIGHT

RÒBERT W. NERO. Wildlife Branch. Box 14, 1495 St. James St. Winnipeg, Manitoba. R3H 0W9

Observations by two separate parties in the same general area of Manitoba's Interlake Region in late August 1985, and a road-killed bird in April 1986, suggest owl predation on frogs during their nocturnal movements across roads.

Lori Thompson, Manitoba Fisheries Branch, reported that on 22 August 1985, between 9:00 p.m. and midnight, while driving from Ashern to Riverton, a distance of approximately 90 km (56 mi.), 15 to 25 owls were seen standing on the road. This was during a heavy rainfall with thunderstorm activity. He said that the owls were all large and several times he narrowly missed hitting them. The owls were assumed to be feeding on something on the roads (PR 228 and 233), but the observers did not stop to confirm this. Lori

*Great Gray Owl* *R.E. Gehlert*

was accompanied by Ken Campbell and Anton Peterson, Fisheries Branch employees from Gimli.

Joyce Beaulieu, Winnipeg, phoned to tell me about seeing a massive movement of frogs, and six large owls, during a rain late in the evening of 30 August 1985, on roads between Riverton and Hecla village, a distance of about 45 km (28 mi.). This was between 7:34 and 9:30 p.m. According to Joyce, numerous large frogs covered the roads and she was dismayed by the number of frogs they were driving over. During the drive she also saw six large owls standing in the center of the road. She was convinced that two, one on the causeway and one on Hecla Island, were Great Gray Owls. In these cases, she had slowed down to get a careful look. The other owls, two of which were also on the causeway, appeared equally large, but seemed paler in color. Later that same night, Barney Beaulieu saw a large owl on the midline of the highway closer to Riverton. Joyce and Barney Beaulieu have travelled this route for the past 10 years, but have not previously seen anything similar.

The two large owls in this area, the Great Gray Owl and the Great Horned Owl, are both known to feed on frogs, especially when pressed for food.[1] [2] [3] Snowshoe Hares and Sharp-tailed and Ruffed grouse populations in this region are notably low, and have been for the past 3 years. Voles in the Pinawa area, a considerable distance southeast, crashed in mid-winter 1984-85, reaching an all-time low according to Steve Mihok, who guessed that it would take a year or two for these populations to recover (pers. comm., 1984). Several radio-marked Great Gray Owls that had bred successfully in southeastern Manitoba in summer 1984, emigrated over winter to more northerly areas. Those few that remained failed to breed in summer 1984, presumably because of the scarcity of voles. Ray Tuokko reported that Great Horned Owls at a nest near Lac du Bonnet in summer 1985 subsisted mainly on a wide variety of small birds (pers. comm., July 1985).

The frequency of frogs as prey for the Great Gray Owl has been regarded as low, but during non-nesting situations observations of predation are practically nil. Moreover, the relatively soft bones of frogs may not always be found in owl pellets. Evidence that the Great Gray Owl sometimes preys heavily on frogs, however, was obtained recently.An immature female, killed near Pointe du Bois, Manitoba about 10:30 p.m., 17 April 1986, had six Wood Frogs and a Masked Shrew in its stomach. This owl had been sitting on the road adjacent to a tamarack bog when it was accidentally struck and killed by a car driven by Mrs. Dave Cavanagh. The dead bird was found the next day by Dave Cavanagh who kindly brought it to me.

The above data lend support to the speculation that Great Gray Owls, and possibly Great Horned Owls, when desperate for food take advantage of nocturnal movements of frogs as a prey source.

**Acknowledgments**

I am indebted to Joyce Beaulieu and Lorimer Thompson for calling my attention to their observations, and to Dave Cavanagh for ensuring that a road-killed Great Gray owl was recovered and made available for study.

[1] BENT, A.C. 1938. Life histories of North American birds of prey. Part 2. Bull. 170, U.S. Natl. Mus, Reprinted 1961, Dover Publ. Inc., N.Y.

[2] CRAMP, S. (ED.). 1985. Handbook of the birds of Europe, the Middle East and North Africa. Vol. 4. Oxford University Press, New York.

[3] NERO, R.W. 1980. The Great Gray Owl, phantom of the northern forest. Smithsonian Institution Press, Washington, D.C.

# OBSERVATIONS AT A YELLOW-BELLIED SAPSUCKER NEST

JEAN BANCROFT, 306-200 Tuxedo Avenue, Winnipeg, Manitoba. R3P 0R3

On many occasions over the years at Whytewold (southern end of Lake Winnipeg) I have observed Yellow-bellied Sapsuckers. Until summer 1984, however, I was never fortunate enough to follow an entire nesting period. In our area the male bird's arrival in spring is made known by its cries and drumming on metal chimneys and garbage cans. This can be irritating to a cottager, especially when the persistent noise sometimes begins as early as 0500 h. By this means the bird establishes its territory, warns off competitors, and attracts a female.

On 14 May I first noticed a male drilling a hole approximately 5.4 m from the ground in an old aspen poplar, a tree with only a few leafy branches at its top. It stood in front of a cottage among several ash trees and saskatoon bushes. Sapsuckers seem to choose trees affected with tinder fungus (*Fomes ignarius*), preferably aspen poplars; this fungus attacks heartwood and makes excavation much easier.[10]

As it is generally known that sapsuckers do not use every hole they excavate, I visited this site frequently in order to determine if it would be used for nesting. One authority states that the hole is "bored by both sexes, but mostly by the male" and that it "takes 15-28 days" to drill.[6] Brewster, *in* Bent, states that the "sexes work alternately... a week or more is occupied in the completion of the nest...A small quantity of the finer chips are left at the bottom to serve as a bed for the eggs."[2] The diameter of this particular hole was about 4.2 cm. Inside measurements are reported as about 35 cm in depth and 12 cm in diameter.[7]

It was not until 1 June that I noticed a female fly into the nest hole. For the next few days I did not see either male or female at the hole; I heard and saw, on numerous occasions, only the male which was tapping nearby.

During the entire nesting period the male drummed, sometimes for long periods, on a sheet of plywood used for playing basketball and attached to a large oak, approximately 30 m from the nest site. The bird always drummed on the edges of the board "in a broken series prrrrrrrrp, prrp, prp, prp" as described by Reed.[9] On 4 June at 1030 h the male, after giving his call, flew onto the stump of a cut-off branch a few cm below the cavity, then darted across the road into a wooded area, returned, repeated his call and then flew to the board where he began drumming again. This was a frequent pattern, interspersed at times with long stretches of vigorous preening on a nearby ash tree.

On 9 June I watched the male fly to the same perch below the cavity and cling to it for several minutes, remaining perfectly quiet and motionless except when he turned his head to look up at the hole; the female also had this habit. Two days later, at 0800 h, I observed the male peer into the cavity before squeezing himself into it. A few days later the male flew to the hole, peered into it and then proceeded to put his head inside the opening 12 times. He then pecked at the inside of the hole to widen it. Brewster also mentions that "so small indeed was this entrance in proportion to the size of the bird, that in many cases they were obliged to struggle violently for several seconds in either

going out or in."[2] On 19 June, when I arrived at the site, I heard tapping coming from within the cavity. After a moment the male's head protruded from the hole and he threw out fine wood chips.

In spite of regular visits (up to three times daily) I was unable to determine the exact date when incubation began. Both male and female are said to incubate the three to seven white eggs.[5] Forbush, *in* Bent, gives the incubation period [by both sexes] as "probably 14 days."[2] Bent says "as is the case of most nestling birds reared in a hole in a tree, little is known of the young sapsuckers while they are in the nest."[2]

On 3 July, from 0755 to 0805 h both male and female fed the young. Later in the day the male flew out with a fecal sac, dropped it, and then rubbed his bill on the bark of the nearby ash tree; then he flew back into the cavity. The male and female took turns brooding and feeding the young. When one gave its call at the cavity entrance, the other would fly out and the first would immediately go in. On 16 July both parents were still going completely into the cavity. The next day, at 1600 h, young were heard calling for the first time. By 22 July their calls had become quite audible. At 1210 h that day the male flew out with a fecal sac. The next day, when the female came with an insect in her bill, she went only part way into the hole. By 24 July the young in the cavity could be heard 15 m away.

On 1 August at 1017 h I noticed the male drop an insect just inside the opening. Two youngsters were struggling to come to the entrance. Finally, at 1600 h one youngster's head protruded from the

*Yellow-bellied Sapsucker* *Fred W. Lahrman*

hole. The nestling period proved to be a lengthy one. Harrison notes that the nestlings "climb to upper nest for feeding by 18 days, to entrance by 20 days. Leave at 25-29 days."[6] On 4 August, when I visited the site again, no sapsuckers were in sight, but on 6 August at 0945 h a male was pecking at an ash tree 15 m away. After that date no more sapsuckers were seen or heard. After the nesting period these birds are "comparatively silent."[2]

The feeding habits of the Yellow-bellied Sapsucker are interesting. Although they belong to the woodpecker family "they lack the long extensile tongue which enables the other species to probe the winding galleries of wood-eating larvae."[3] Their diet consists mainly of insects and sap, with fruit on occasion. In this particular case, both male and female drilled in two nearby ash trees, eventually stripping large pieces of bark down to the bare trunk. Saskatoon bushes nearby had circular drilling in several rows. Dennis states that "the holes are drilled primarily for sap...The birds also consume any small insects that they can easily catch near the holes or that sometimes drown in the sap."[4]

Many years ago we found that after sapsuckers had attacked several of our Saskatoon bushes at Whytewold these bushes eventually died. Others have noted that these birds can cause trees to die.[1] McAtee, *in* Bent, states that the Yellow-bellied Sapsucker "must be included in the class of injurious species."[2] Not all authorities, however, agree that trees are endangered by sapsuckers.[8] Sapsuckers are also beneficial. Through their sap wells, says Dennis, "they provide the only source of food that is readily available to other birds. Ruby-throated Hummingbirds time their spring migration into the still leafless, wintry northlands not to coincide with early wildflowers, but sap flowing from sapsucker diggings... Warblers and other small birds become dependent upon sapsuckers when flying insects are unavailable. The services that sapsuckers render should make us feel more kindly toward this droll, sometimes destructive bird."[4] Knapton et al. reported hummingbirds even following sapsuckers in order to find their diggings.[8]


[1] BANCROFT, J. 1965. Damage to trees by sapsuckers. Blue Jay 23:107.

[2] BENT, A.C. 1964. Life histories of North American woodpeckers. Dover N.Y. 334 pp.

[3] DAVIE, O. 1898. Nests and eggs of North American birds. Musson Book Co. Ltd., Toronto. 509 pp.

[4] DENNIS, J.V. 1981. Beyond the bird feeder. A.A. Knopf, Inc. New York,N.Y. 201 pp.

[5] GODFREY, W.E. 1966. The birds of Canada. Nat. Mus. Canada Bull. 203.428 pp.

[6] HARRISON, C. 1978. A field guide to the nests, eggs and nestlings of North American birds. William Collins & Sons, Glasgow. 416 pp.

[7] HARRISON, H.H. 1975. A field guide to birds' nests in the United States east of the Mississippi River. Houghton Mifflin, Boston. 257 pp.

[8] KNAPTON. R.W., R.V. CARTAR and J.D. REYNOLDS. 1985. Do hummingbirds follow sapsuckers to food sources? Blue Jay 43:186-187.

[9] REED, C.A. 1922. Land birds east of the Rockies. Doubleday, Page, Garden City, New York. 228 pp.

[10] UDVARDY, M.D.F. 1977. The Audubon Society field guide to North American Birds (western region). A.A. Knopf, New York. 853 pp.

[11] U.S. DEPT. AGRI., FOREST SERVICE. 1977. Cavity-nesting birds of North American forests. U.S. Gov't. Printing Office, Washington, D.C. 112 pp.

# ROOSTING HABITS OF AN URBAN MERLIN

E. OTTO HOHN, 11511 — 78 Avenue, Edmonton, Alberta. T6G 0N4

*The Merlin on one of its favourite pre-roosting perches on a house roof on the opposite side of the small porch from the roost*

At dusk on 17 December 1985 I saw a Merlin resting on a lamp post by a small park in a residential part of Edmonton, not far from the wooded slopes of the North Saskatchewan River valley. I surmised that the hawk was about to roost in one of a group of spruces in the park. Later observations showed that it did indeed come to this area to roost, but the actual roosting place was in a spruce standing beside the front door of one of the houses facing the park. This tree had two trunks close together, apparently growing from the same root. This factor and the nearness of the two story house probably made this tree a more sheltered environment than

a freestanding single-trunk spruce and may have influenced the Merlin's choice.

An adult male Merlin, presumably the same bird was observed in the immediate area of this roost on 57 occasions between 17 December 1985 and 15 May 1986.

On these occasions when I was on the scene before the hawk's arrival it nearly always came in from the direction of the river valley.

It would then stay on one of seven different perches, of which only two were used frequently, for an appreciable period before flying into the roosting tree. Waiting time on the perch on 19 evenings between 4 February and 11 May ranged from 8 to 34 minutes, with an average of 17.4 minutes. Almost always the hawk perched in such a way as to face the brightest segment of the sky.

*The small oak in the left foreground was another much used perch from which the hawk would (in due course) swoop into the roost in the spruce immediately right of the house*

The hawk never arrived at a perch in the roosting area with prey. Most of the time it remained immobile on the perch. Preening movements took up only a very small fraction of the time spent perched and were totally absent on some evenings. The bird's behavior gave the impression that it required a period of quiet rest before the urge to enter the roost reached threshold level.

When leaving the perch, the hawk, without any preliminary flying intention movements, would first fly downward and then swing upward so as to enter the tree at about mid-height. For a number of consecutive observations it would use the same perch then switch for at least several days to another, perhaps after some time returning to using the first one.

Times of arrival on the perch and of entering the roost in relation to sunset changed sharply at the end of February. Before this period the falcon generally arrived 20 to 30 minutes before sunset and flew into the roost about sunset. In March, April and May it did not arrive in the roosting area until sunset or even later and it would fly into the roosting tree some 20 minutes later. During this time visibility was on occasion so poor that the falcon could be seen to leave its perch but would immediately be lost to view.

The change in roosting time as spring advanced may have been due to the hawk's becoming involved in breeding. The fact that it did not use the roost under observation after mid-May may suggest that it roosted near its (presumed) nest when the demands of its young for food became heavy.

The evident relationship between sunset and arrival in the roosting area and entry into the roost, suggest that both may have been determined by light intensity. However, I did not find that these events always took place earlier on overcast than on sunny evenings. I therefore conclude that light intensity plays an important but not exclusive role in their timing.

Cramp and Simmonds, who give an account of roosting in Merlins, state that before settling down for the night the birds often engage in spectacular aerial chases. These are more frequently seen near roosts used by more than one bird.[1] I only saw two aerial chases.

On 19 January, two Merlins, engaged in an aerial chase, were seen 17 minutes before sunset.

Almost as soon as they came into view they were joined by a third falcon. The usual kee kee kee call was heard from at least one of the group, which was lost to view after a few seconds. At that time the hawk had not as yet arrived near the roost. Eighteen minutes before sunset on 2 February, as I was walking from home to the roost, a Merlin chasing another flew overhead. Nearer the roost a female Merlin was perched on a weeping birch in a garden. It kept up a series of calls throughout the time I was within earshot. About 2 minutes later, I arrived in the roosting area and the male Merlin was already on one of its "traditional" perches. It flew into the roosting tree 6 minutes after sunset.

[1] CRAMP,S. and SIMMONDS, K.E.L. 1980. Handbook of the birds of Europe, the Middle East and North Africa. Vol. 2. Oxford. 695 pp.

# AN UNUSUAL VISITOR

CURTIS POLLOCK, Box 40, Hyas, Saskatchewan. S0A 0L0

When Randy Krukoff of Canora arrived home around midnight on 8 March, he found an unusual visitor waiting by the door, this Eastern Screech-Owl. Although locally common in eastern Canada and the United States, it is considered quite rare in Saskatchewan where it is at the extreme northwest portion of its range. In The Birds of Canada (Godfrey, 1966; Nat. Mus. Canada, Ottawa) it is described as a"permanent resident in ... southern Saskatchewan (Yorkton; breeding range not well known, but the bird has been reported occurring west to Cypress Hills region and north to Saskatoon)." The Birds of North America states that "Eastern Screech-owls are common in a wide variety of habitats: woodlots, forests, swamps, orchards, parks, suburban gardens" (Robbins, et. al., 1983; Western Publ. Co., N.Y.). However, the Saskatchewan Natural History Society says that they prefer wooded river valleys, and society members conducted a search last April for evidence of the bird breeding in the Assiniboine and Whitesand River valleys in this area which is considered to be one of the most probable locales for the species' occurrence in this province. They were unsuccessful at that time.

# EASTERN SASKATCHEWAN BIRDS HIGHLIGHTS — 1985

CURTIS POLLOCK, Box 40, Hyas, Saskatchewan. S0A 0L0

My bird observations in the upper Assiniboine River area in 1985 began routinely enough through the winter months and in the early spring, giving no indication that before the year was through I would add 25 species to my Saskatchewan lifetime list, including several of the province's less common birds. In addition, my wife saw another two "new" species which, unfortunately, I did not.

In fact, I did not add a "first-ever" species until 21 May when a flock of about a dozen Lesser Golden-Plover appeared in the Hyas area, along with thousands of Lapland Longspurs which, although formerly common in the area during migration, I had never before seen.

It was about this time, although she did not record the date, that my wife saw a Whimbrel several miles north of Yorkton. As well, she had earlier seen a Prairie Falcon (rare in our area) and an Eastern Bluebird, and we both had seen a "Krider's Red-tailed Hawk" and an unusual, white-headed robin earlier in the spring.

On 9-10 June we saw Forster's Terns and Turkey Vultures at Duck Mountain Provincial Park, as well as 10 species of warblers.

On 15 July along the nature trail at Greenwater Lake Provincial Park, we saw an Eastern Wood Pewee, identified clearly by sight as a pewee and by voice as the less common of the two pewee species in Saskatchewan.

On the Key Indian Reserve north of Kamsack, we observed an American Black Duck in company with several Mallards on 12 August and a week later at Cote Siding near Duck Mountain I noted a Sedge Wren while hiking alone along Little Boggy Creek.

On 26 August while visiting at Regina, we took a drive out to the Condie Wildlife Refuge where we saw a pair of Caspian Terns, my second sighting of that species.

On 9 September while returning home from Yorkton, I followed a "hunch" and turned in to Good Spirit Lake Provincial Park and began to walk the trail from the southern edge of the park center to the sand dunes. However, I immediately began encountering warblers, followed by several thrushes, including my first-ever Wood Thrush.

It flew up from the ground into a tall aspen and sat upright on a branch with a posture and profile which immediately struck me as being different from the other thrushes with which I am familiar. As I focussed my binoculars on the bird, I noted a very bold white eye-ring, and heavy round spots on its breast and sides, extending down even past the legs, becoming smaller on the throat and turning to streaks on the face.

Because of poor lighting (the bird was semi-silhouetted) I was unable to make a distinction in the coloration of the upper parts. To me they appeared uniformly dark, but I was concentrating on the spots and streaks which I knew were the markings of a Wood Thrush. Lowering the

binoculars, I slid my "Golden Guide" out of my back pocket, but I had no sooner opened on thrushes and noted the same features than the bird flew deeper into the woods and was not seen again.[2]

I did not see another "first" until 20 October when I got separated from the rest of the Natural History Society members who were heading up the east side of Last Mountain Lake for a field trip to conclude the annual meeting held the previous two days in Regina, and ended up on the west side of the lake instead, in the company of society members Bob and Suzie Kohlmeier of Saskatoon. There, while I was wondering what the other members were seeing that I was missing, we encountered a Red Knot, which helped reduce my disappointment at having missed the main excursion.

Finally, on December 29, on my fifth try, I located the Great Grey Owl which had been reported in the area northwest of Hyas since the 19th of the month, and obtained several excellent photographs. It was certainly an exciting conclusion to a bird-watching year which turned out to be very rewarding!

**Note**: The Great Grey Owl has remained and been seen almost daily in the area ever since, as recently as 8 March. On one occasion two were seen together, raising the exciting prospect that we may have a breeding pair.


[1] GODFREY, W.E. 1966. The birds of Canada. National Museum of Canada, Ottawa.

[2] ROBBINS, C.S., B. BRUUN, and H.S. Zim. 1983. Birds of North America. Western Publ. Co., New York, NY.


*Great Gray Owl, Hyas, Saskatchewan* *Curtis Pollock*

# NATURE LIBRARY

## THE BIRDS OF CANADA

W.E. GODFREY. 1986. National Museum of Natural Sciences (Canada), Ottawa, Ontario. 595 pp. 74 coloured plates, 102 black and white figures. Glossary (2 pp.) List of provincial and other bird publications (6 pp.). $39.95

After 20 years and 60 new species, a revised edition of this bible is most welcome. It treats 578 species that have been reliably reported to December 1984 plus 37 species of hypothetical status, i.e., with inadequately documented observation. As in the first edition, regularly occurring species have a map with the range in Canada which is also detailed in the text, a general description, and sections on measurements, field marks (in many cases better than field guides), habitat, nesting (including incubation periods) and worldwide range. The two columns are now different widths, the narrow one being largely reserved for the map and text for Canadian range. The new version has 168 more pages, each of which is about 2) mm higher and 10 mm wider than the 1966 book.

The species most recently recognized by taxonomists are her also: Arctic and Pacific loons, Western and Clark's grebes, Yellow-bellied, Red-naped (not illustrated) and Red-breasted sapsuckers. However, contrary to the 1983 American Ornithologists' Union Checklist, Godfrey has put Iceland and Thayer's gulls into a single species — Iceland — on the basis of studies on Baffin Island.

The number of John Crosby's excellent plates has been increased by five and includes paintings of 498 species (431 in earlier version), most in more than one plumage, some with both flying and swimming or standing poses. Individuals of new species and others with new plumages have been ingeniously inserted into some of the old plates while other plates have been reorganized and redone. Unfortunately, in some cases leg colour has changed between printings, e.g., immature Solitary and Stilt sandpipers. A significant improvement is the naming of each species and the referencing of the text page on the plate, plus the grouping of plates into nine sections through the book. The line drawings, by S. D. MacDonald and Crosby, have been increased by 35.

Of at least 426 species that nest, maps are presented for the Canadian breeding ranges of 384. New maps, i.e., not in the 1966 edition, include those for Golden Eagle, Peregrine Falcon and Sandhill Crane. Species still without maps include Trumpeter Swan, Whooping Crane and Rock Dove. Detectable increases in ranges are shown for more than half the species found in the Prairie Provinces and Northwest Territories. The greatest changes for the Prairies are in Great Crested Flycatcher, Sedge Wren, Northern Mockingbird and European Starling, probably representing true range extensions. [In the case of the first two species, the details given under "Range" (worldwide) have not been updated to accommodate these westward extensions.] In other maps, large changes have resulted from the confirmation of suspected breeding ranges (designated by question marks in 1966), e.g., Pectoral and Buff-breasted sandpipers, Red-necked Phalarope, White-breasted Nuthatch and Nashville Warbler. However, it is surprising how many still remain; for instance, Eastern Screech Owl and Horned Lark.

There are also maps with diminished ranges, e.g., Eared Grebe and Ferruginous Hawk in southeastern Manitoba, Yellow Rail from northern Saskatchewan and Manitoba, and Wilson's Warbler in Alberta. For many species there is an indication of a larger breeding area in the text under "Range in Canada" than is mapped. Grasshopper Sparrow, for instance, has "summer sight records north to Saskatoon" but a mapped nesting area much farther south. This section also outlines nonbreeding distribution in Canada. (Lazuli and Indigo buntings hybridize in southeastern Saskatchewan, not southwestern as stated on p. 501.)

Some maps, however, do not, as claimed, "show the distribution in Canada of each bird species as it was known through 1983 and early 1984." Two examples: Godfrey quotes no Greater Prairie Chicken records for Canada since 1976 but the map shows considerable red in the Prairies. Breeding is shown for Long-billed Curlew in the areas covered by Belcher's *Birds of Regina* (1980), Callin's *Birds of the Qu'Appelle* (1980) and Knapton's *Birds of the Gainsborough-Lyleton Region* (1979); the first two claim it as an "irregular" and "occasional" transient and the third does not even list it as occurring. There are no recent records of breeding there known to the reviewer and apparently none since the 1960s for southwestern Manitoba. Northern Mockingbird is not known to breed regularly at any of its isolated occurrences in the Prairies, let alone through the range indicated for the early 1980s. There are no Saskatchewan occurrences for some species in the text because "good" sight records were omitted, e.g., Yellow-crowned Night-Heron, Glossy Ibis, Sharp-tailed Sandpiper, Iceland and Ivory gulls (*Blue Jay* 1981:196)201).

The maps of Canada that form the front and back end pages are now identical, the vegetation map having been dropped, which is unfortunate. Some "Special Geographical Locations" have also been dropped, such as Waterton Lake and Cypress Hills, while others have been added.

Changes I would like to have seen: the plates all together at the center or back of the book and the map ranges in green or blue or any new colour. I find the jacket design a disappointment. In a store window, "Birds" is the word that stands out, giving the impression of just another coffee table book, and "Revised Edition" (already proclaimed by the painting of a Whooping Crane) is much more prominent than "of Canada."

This is a most worthwhile purchase. If the price scares you off, start campaigning for it as a birthday, Christmas orjValentine's Day present. Members get 10% off from the Blue Jay Bookshop. My thanks to Bob Kreba, Phil Taylor and Herb Copland for their suggestions. — Reviewed by *Bernard Gollop*, Canadian Wildlife Service, Saskatoon, Saskatchewan.
S7N 0X4

## HARRIER, HAWK OF THE MARSHES

FRANCES HAMMERSTROM. 1986. Smithsonian Institution Press, Washington, DC. 171 pp. b & w photos. hardcover $24.95(US), paperback $10.95(US).

The life of the Marsh Hawk, now called the Northern Harrier, is the story told by this book. The author has spent 25 years studying the Marsh Hawk on the prairies of central Wisconsin and presents the results of this work in this book. The book takes us through the trials and tribulations of the 25 years of work and in doing so covers the life of the Marsh Hawk from eggs to fledglings from immatures to adults.

The research began innocently as Hammerstrom watched Greater Prairie Chickens in the early morning and like all who have a life-long interest in birds of prey, was casually observing the hawks while working. One of the more prominent occurrences was the aerial courtship (sky-dancing) of the Marsh Hawk and the question arose — Do harriers mate for life? Although the initial question was answered rather early in the work, more and more arose, and so the inquisitive mind continued to seek answers. The book covers different methods used in trapping adults, methods of marking and radio tagging and the lives of these marked individuals, some of them through several years.

One of the more interesting sections, to me personally, was that covering the DDT era. Most people will be familiar with the egg shell thinning which occurred in such prominent species as the Peregrine Falcon and Bald Eagle. But, the Marsh Hawks did not show great amounts of egg shell thinning. Instead there were no eggs. The birds' mating systems broke down, courtships ceased, pair bonds weakened and territorial defence behavior deteriorated and nests were not even initiated. In an area that had had about twenty nests per year prior to the critical late sixties, the thought of not seeing the spring "sky dance" seems impossible, but that is exactly what happened. The birds were still there, listless, and not mating. The pattern is not unlike what I remember from my school days. In the early sixties courting Marsh Hawks were a common scene but by the late sixties when I was actively searching for all hawk and owl nests, Marsh Hawks were not courting. In fact it was 10 years (late 70s) before I again saw the sky dance at our farm south of Raymore.

I have only one complaint with this book and that is the cost of $25. ($30.+ CDN) for the hardcover volume. That price is exceedingly excessive. Fortunately the paperbound volume is much more reasonably priced.

The book is well produced and most importantly is very readable. All the information is there and presented in such a manner as to keep the reader's attention. It is a story book which is scientifically informative. Frances Hammerstrom must be congratulated in preparing this book. You would not even have to have an interest in hawks to enjoy this book, but beware if you were not specifically interested in Marsh Hawks, you undoubtedly will be after reading it. I highly recommend this book to both professional and amateur audiences. — Reviewed by *Wayne C. Harris*, Box 414, Raymore, Saskatchewan. S0A 3J0

## BIRD BEHAVIOR

ROBERT BURTON. 1985. Alfred A. Knopf, Inc., New York. 224 pp. $25.95

Bookstores are full of books whose only purpose is seemingly to be decorative. When one which is handsome also turns out to be both endlessly interesting and

highly useful, it should be singled out. This book is such a one. Both the author and the Consulting Editor, Bruce Campbell, have substantial experience in various aspects of ornithology and natural history and their joint contribution to this publication is a happy blend of talents.

Burton's introduction makes clear his purpose in preparing this book: to gather and make accessible to a general audience an increasingly exciting body of scientific research into bird behavior — which is unfortunately also increasingly complex and can be almost incomprehensible to the average reader in its typical scientific-journal format. In this highly visual and eminently readable insight into the everyday actions of familiar birds, Burton stimulates the reader to go beyond casual observation, to look ever more closely — and in that closer look to find the underlying patterns and the greater satisfaction which comes from understanding the basic themes of all bird life.

The text is well-written, clear and precise. From a chapter on the individual bird and its basic daily round of activities, Burton goes on to discuss flight, the senses and intelligence, food and ways of obtaining it, communication, nesting and rearing of young, social organization and interaction and, for many one of the most mysterious aspects, migration. He organizes all this into succinct and easily findable sections describing the common themes with examples taken from a wide range of bird species, domestic and wild, exotic and familiar, from every continent. Granted, he generalizes about or only touches on some topics for which readers may well want more detail. Those who choose to focus on the fine points of a specific subject will likely not see Burton's book as their only source, but rather a fine launching point for their particular interests.

It is the almost 600 photographs, plus additional maps, sketches, diagrams and sonagrams, which really "make" this book. The full-page list of credits for photos and artwork (most commissioned especially for this volume) is impressive, and all the photos testify to the skill of their creators in finding the sites inaccessible and the moments irreproducible. They range in size from approximately 5 x 7 cm to 24 x 29 cm, larger than a single page, with the majority about 10 x 15 cm. Some are singles; others are in series of varying length. Some are dramatic — an alligator leaping to capture an egret or a flock of ravens crowded around a snow-covered carcass; some border on the comical, such as a family of three droll young screech-owls waiting for parents' attentions. Photos such as those of Sandhill Cranes feeding at dawn or herons silhouetted against a twilight sky are worthy of inclusion in any collection of fine art photographs. All are in colour, as are a number of the sketches and diagrams.

Certainly some photos appear to be better than others, yet all have a purpose and the often lengthy captions quickly clarify for the reader the point being made. Much information is contained in these captions and the reader with only a few minutes to spend can well profit from only looking at the pictures and reading the photo descriptions, leaving the comprehensive text portions for more leisurely moments. On several levels this is a good "looking" book.

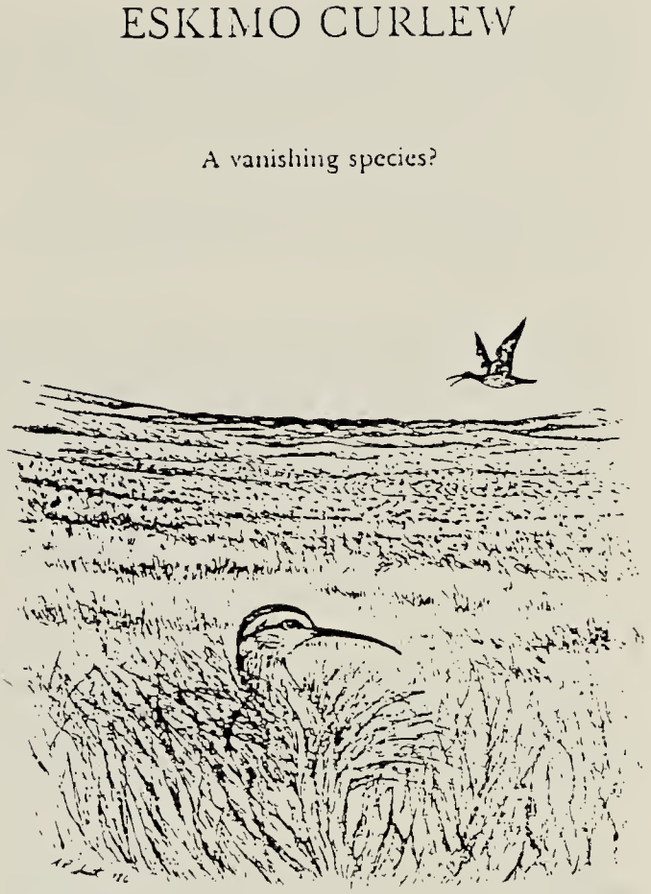
It is unquestionably a valuable addition to any birder's home reference library, where it will surely be more often in use than on the shelf. — Reviewed by *Mary D. Gilliland*, 902 University Drive, Saskatoon, Saskatchewan. S7N 0K1

# ANNOUNCEMENT: ESKIMO CURLEW A VANISHING SPECIES?

J.B. GOLLOP, T.W.BARRY AND E.H. IVERSEN. 1986. Special Publication # 17 of the Saskatchewan Natural History Society. 160 pp. 19 photos. 8 drawings. 7 maps. $9.00.

This history of the endangered Eskimo Curlew, a New World shorebird, is based primarily on the 600+ titles listed in the bibliography. It begins with Christopher Columbus and continues through 1985 with chapters on the curlew's current status (including sightings since 1945), identification, names (local, common and scientific), nest searches in the 1860s and 1980s and life history (breeding, migration, habitat, food and feeding habits, other behaviour, voice, hunting and the species' decline). Only 39 nestings of this species have ever been reported and only one has been previously published. In this book are presented the details and an analysis of the other 38, from the handwritten notes of Roderick MacFarlane, a Hudson's Bay Company factor in the Northwest Territories in the 1860s. A major section of 70 pages is largely composed of quotations from some 300 people who wrote about the curlew in 71 countries, provinces and states, including dates and places of occurrence from Siberia to Argentina to England.

Available from the Blue Jay Bookshop Box 1121, Regina, Saskatchewan. S4P 3B4.




# HANDBOOK OF CANADIAN MAMMALS 2. BATS

C.G. VAN ZYLL DE JONG 1985 National Museums of Canada. 16.5 x 24 cm, 212 pages, 4 color plates, soft cover $19.95

Despite some misleading statements by public health and humane society officials this past summer, bats are not likely to be rabid and need not be feared. On the contrary, bats are among the most interesting creatures on earth. In foreign parts, some species face extinction owing to man's determination to destroy them for one reason or another.

No Canadian bats feed on fishes, flowers or nectar, but all depend on echolocation for capturing prey in the dark. By this means, even small insects are

located in flight and often scooped up with a wing-tip and transferred to the bat's mouth. These and many other adaptations of these flying mammals are ably described in this second book in this new series. (For a review of the first, see the *Blue Jay* 43(1):72-73).

Van Zyll de Jong has provided a useful semi-technical book. Four color plates (19 species) by Paul Geraghty and 32 pages of general information offer a good introduction to bats for the layman or naturalist. Yet there is much sound, easily understood material given under Biology for each of the 20 species covered in the book. The distribution maps, showing continental and Canadian ranges, are especially instructive and up to date.

A comprehensive glossary (9 pp.) and bibliography (17 pp.) show how well the author has covered his subject. It was pleasant to find seven citations to publications in the *Blue Jay*, but a 1959 report by Spencer Sealy on bats overwintering at Battleford (*Blue Jay* 18(3):139) is missing.

For the mammalogist (amateur or professional), zoology and wildlife student this book provides much technical information, including fine drawings by Charles Douglas of bat skulls. The book strikes a nice balance between popular and technical information. If you like bats, or better — if you don't — then buy this book. Although a soft cover book, there is a dust jacket which should be retained, if only because it includes a good photo of Stan van Zyll de Jong (no mention is made of his youthful life in a Japanese prisoner of war camp).

Recent reports of substantial cutbacks in scientific and support staff at the National Museums of Canada may mean decreased output of useful publications such as the Handbook of Canadian Mammals. "Only in Canada, you say? Pity!" — Reviewed by *Robert W. Nero*, 546 Coventry Road, Winnipeg, Manitoba. R3R 1B6

## WILD HUNTERS

DICK DEKKER. 1985. Published by the Canadian Wolf Defenders, Box 3480, Station D, Edmonton, Alberta. T5L 4J3. 224 pp. Illus. black and white photographs, ink drawings. Paper $12.00.

This book relates the details of the author's "adventures with wolves, foxes, eagles and falcons based on 25 years of field observations" in western Canada. In it, readers will find uncommon insights into the lives of predators and their prey as they go about securing a meal and avoiding being eaten. Uncommon because Dekker's book is based upon hundreds of painstaking, patient hours of field study in all seasons ad in many haunts — from the shores of Beaverhill Lake, the banks of prairie rivers, the foothills of the Rockies to the boreal forest of the Yukon.

*Wild Hunters* is a pleasure to read. Written with feeling and insight, Dekker paints powerful and lasting images with his prose. Twenty-six essays are grouped by common subject into six chapters on: the wolf; the red fox; the falcons; the bald eagle, accipiters, harrier and jaegers; the golden eagle and buteos; the functions of these predators in nature and their relationship to man. Through fresh eyes we explore the private lives of predators.

The essays on wolves examine their history in North America from the time of contact with Europeans to the present. Particularly interesting are the accounts of the Jasper Park wolves. The long term consequences of wolf poisoning programs having major impacts on prey populations (elk, sheep and deer) and the subsequent changes to the wintering range of these animals are followed and interpreted. As big as Jasper Park is we realize it is not a safe wilderness island. The fortunes of the red fox in the prairie provinces are in strong contrast to those of the wolf. The

secret of how these small canids survive even flourish under the very nose of the farmer, his pet dogs and the prairie coyote is remarkable.

Dekker has observed over 800 attempts by Peregrine Falcons to capture prey! By waiting, and watching from favourite observation spots the author has adopted the techniques of his subjects and his reward is that he sees more than the average naturalist on hunting peregrines: "They come down in mile-long stoops and fall among flocks of sandpipers like a bursting shell. If they cannot strike, they regain their soaring pitch and attack elsewhere. It took a great deal of watching before I understood this relatively simple hunting strategy." We experience the terror of the hunted also. "The last bird in the straggling line seemed doomed, but a split-second before the falcon was in a position to stoop, the duck dropped like a stone. The timing of this evasive tactic was so perfect that the falcon had no chance to dive after the falling bird." From Dekker we learn the excitement of studying wildlife and gaining new understanding. Expect tips on identifying mammal tracks and raptors on the wing to help in even casual field observations. By trying some of the author's field techniques your "arena" of study will become larger. Imagine spotting peregrine Falcons while they hunt — at 1 km or more distance!

The book is beautifully designed and illustrated. Some 46 well-chosen black and white photographs are found throughout the book. In addition Dekker's ink sketches of the hunters add an even more personal touch to the book. The cover portrait of a wold, with its haunting eyes, leaves a lasting impression even after the book is put down.

Dick Dekker has published many scientific and popular articles on his studies in addition to his book *Naturalist-Painter* (1980), where his colour paintings of these same wild hunters appear. In 1976, he was the first recipient of the Loran M. Goulden Memorial Award for his contributions to the understanding of Alberta's natural history.

This is a book of rare quality which I highly recommend to anyone interested in natural history and particularly to those who share the author's affection for *Wild Hunters*. — Reviewed by *Philip S. Taylor*, 1714 Prince of Wales Avenue, Saskatoon, Saskatchewan. S7K 3E5

## CHECK-LIST OF BIRDS OF THE CALGARY REGION

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